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ABSTRACT

This second volume of the Fresno Educational Master Plan describes seven major factors identified during the development of PROJECT DESIGN and considered crucial to effective educational planning for the future in Fresno, California: (1) Direction of future social change; (2) school management needs; (3) school district philosophy, values, goals, objectives, policy, and regulations; (4) interagency cooperation for planning; (5) alternative models of educational change; (6) sources for educational finance; and (7) special problem-solving procedures. Following this assessment, a summary of the Educational Master Plan model, designed to accommodate each of these major factors, is presented. Project publications and participants in this ESEA Title III project are listed. Related documents are EA 002 854 and EA 002 856. (JH)

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EDUCATIONAL MASTER PLAN

Best Copy Available

A SUMMARY

B CONFIGURATIONS : DESIGN FOR THE FUTURE

C IMPLEMENTATION : PLANNED CHANGE

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FRESNO, 1969

PROJECT Design

EA 002 855

FOREWORD

PROJECT DESIGN (Interagency Planning for Urban Educational Needs) was organized as a two year project to develop a comprehensive long-range Master Plan of Education for the Fresno City Unified School District in California. Funded by the United States Office of Education from Title III provisions of the Elementary and Secondary Education Act, its intent was to bring under one umbrella current major problems of the schools, the relationship of the schools to the broader community, the impact of educational change now occurring throughout the nation, and a fresh view of the educational needs, goals and aspirations of our youth and adults. The ultimate purpose of the project was to weld into an integrated plan the best use of available resources to meet the totality of current and projected educational needs. Design and application of such a comprehensive urban, interagency, educational planning model was an innovative planning project far exceeding in scope any known prior education master plan.

The first year of the project was organized to assess current and projected needs in the urban area served by the Fresno City Schools with particular reference to certain identified major problems. Development of new interagency planning relationships with major governmental and community groups was an optimum goal.

Second year activity focused upon generating and evaluating practical alternate solutions and designing short-term, intermediate and long-range recommendations in harmony both with the predictable future and with current constraints and limitations.

Extensive studies by Task Force consultants and the project staff have been reported in thirty-six earlier project publications which are listed in the Appendix. Repetition of data and recommendations from these basic publications was intentionally avoided to the extent possible in the two major volumes (B and C) of the Educational Master Plan, and in its summary (volume A).

PREFACE

This is not a final master plan of education. Neither is it complete. Some will find a gap, a generality or a process substitute for the well-defined solution they seek. The format will appear rudimentary as other school systems begin to develop master plans of similar dimension. The product, format and techniques used in the project represent the built-in failure dimension of true innovation while they also demonstrate the risk which the U. S. Office of Education and the Fresno City Unified School District were willing to take in pioneering a first model for comprehensive long-range urban educational planning through interagency cooperation.

This is a system design for continuous planning which makes some significant recommendations for initiating and continuing orderly change toward a generally predictable future which will be dramatically different. It is a dynamic rather than a static plan, produced in a dynamic setting where significant change occurred during the planning period. It was produced in eighteen effective working months without prior research models for comparison. It created little stress and interruption to the school system and community — and perhaps too little interest and expectation. It represents a highly educational experience for the project staff and, by their volunteered expression, for many of the teachers, administrators and even external consultants associated with the project.

Both the appeal and the frustration of the project were rooted in its ambitious scope: to find answers for such universal problems confronting education as how to meet the special and pervasive needs of the minorities and the disadvantaged, what the appropriate role of the school is in a complex and changing society, how to overcome massive internal and external communication gaps, and how to utilize new and expensive technology in a period of rising costs and shrinking resources.

It is truly impossible to adequately express appropriate gratitude to those community leaders and educators whose vision and service to the project exceeded any reasonable expectations. It is usually thus, it was so in Fresno, and their contribution was a major factor in whatever success may be credited to the project.

For the abundant opportunities to freely dig through this major urban school system by observation, data inspection, test and interview, to pull out of important assignments the key teachers and administrators we needed, and to chart our own way with recommendations, the project staff is most appreciative.

Edward E Hawkins

Edward E. Hawkins
Project Director

INTRODUCTION

Recommendations of the Educational Master Plan are fully developed in two major companion volumes, then summarized in a third volume.

Volume B is called CONFIGURATIONS: DESIGN FOR THE FUTURE. It contains a series of independent configurations of what education can and should be like in developing human potential for a future which is generally predictable. Perhaps the most significant recommendations of the Educational Master Plan are those related to considering, and then acting to select, major strategies which will provide consistent long-range direction for change and improvement toward the year 2000. Many of the configurations are relevant to other school systems as well.

Volume C is called IMPLEMENTATION: PLANNED CHANGE. First, it summarizes the systematic analysis of major current problems and challenges for the Fresno City Schools with criteria for adequate solutions. It then presents a number of activities recommended for immediate implementation. Many activities are arranged in time-related sets and extend into the intermediate future to about 1975. Each series of activities is independent so some can be initiated without others, but they are appropriately interfaced as there are many interrelated activities across the independent series. Third, some recommendations for further study are made.

Volume A is a SUMMARY. It includes highlights of the configurations and briefly reports the principal recommendations of the major Educational Master Plan Volumes.

This is Volume B, IMPLEMENTATION: DESIGN FOR THE FUTURE.

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I. THE FUTURE

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> Great economic and social forces flow with a tidal sweep over communities that are only half conscious of what is befalling them. Wise are those who foresee what time is thus bringing, and endeavor to shape institutions and mold with the change that is silently surrounding them!
>
> --John Viscount Morley

THE FUTURE

> At exactly 5:13 A.M. the 18th of April, 1906, a cow was standing between the main barn and the milking shed on the old Shafter Ranch in California minding her own business. Suddenly, the earth shook, the skies trembled, and when it was all over, there was nothing left of the cow above ground but a bit of her tail sticking up. For the student of change, the Shafter cow is a sort of symbol of our times. She stood quietly enough, thinking such gentle thoughts as cows are likely to have, while huge forces outside her ken built up all around her and — within a minute — discharged it all at once in a great movement that changed the earth, destroyed a city and swallowed her up....If we do not learn to guide the great forces of change at work in our world today, we may find ourselves, like the Shafter cow, swallowed up by vast upheavals in our way of life — quite early some morning. (3)

The forces of nature that brought about the 1906 cataclysm were beyond our control, but man himself has recently generated the means for the creation of changes that virtually equal the powers of nature in their scope.

Few of us can remember, precisely, what thoughts were in our minds, but most of us remember the numbness and the confusion we felt on that August day in 1945 when we heard how man had wrought the total destruction of a massive Japanese city within a period of time no longer than that consumed by a lightning flash. We, in America, knew that this would signal the end of a tragic conflict and hoped it would usher in an era of peace; what we did not know that day was the effect that atomic power and/or the threat of atomic destruction would have upon our society. This state of numbness has never left our society, and a growing state of permanent tension characterizes all of us in this age in which we are constantly bombarded with technological and social changes beyond our understanding and comprehension. Life for us in America has become

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easier physically, but in virtually every other aspect, it is infinitely more complex. Psychologically, most of us yearn for a plateau in this period of expanding complexity, during which time we might be allowed to collect our thoughts and prepare ourselves mentally and emotionally for the changed world as it exists. The fact is, however, that no plateau will come; quite the contrary, changes will take place at an exponential rate. The gap between the technological instruments of our society and our ability to cope with them will always exist. We can only hope to control the gap if society is willing to squarely face and master the changes that are inevitable, before these changes become master through our inability to deal with them.

The purpose of this section of the Master Plan Report is to provide a picture of what our society may become by the year 2000. This appears speculative, to be sure, but it is not random speculation. Interplanetary travel, for instance, is no longer considered the subject of comic-book fantasy as it was a few short years ago. By the time this report is published, it is very likely that man will have walked on the moon. Within the past few years man has conquered, through his technological and scientific skills, the evils of polio, provided the means for population control, the evolution of the mechanical computer to the point that storage of information and mathematical computations of unbelievable complexity are a part of our everyday life. It is now commonplace to witness, through the miracle of television, news happenings in visual form as they actually occur, or, at the very latest, within the day of their occurrence. We have seen, within the past few months, the transplantation of human organs successfully from one body to another in order to maintain life. The unbelievable developments that we now see in our daily newspaper have virtually eliminated the use of the word "ridiculous" from our vocabulary in reference to predictions of things to come. Nothing at present appears to be beyond belief; the only question now asked is "when"?

Prediction, in years past, was primarily a matter of intellectual and wishful thinking. No longer is this the case. Modern society has recognized prediction and anticipation as the basis for an absolute necessity in current culture. Only through anticipation can we keep the gap between our scientific and technological development and our understanding within acceptable dimensions.

The process of prediction and anticipation has been recently developed into an organized discipline. In 1965, the American Academy of Arts and Sciences brought together a group of leading "futurists" from such diverse disciplines as science, sociology, psychology and government to form the "Commission on the Year 2000" to consider and formulate a picture of our world of the next century (4). Much of the information provided in this report is the product of this commission.

The necessity of prediction and anticipation is recognized in private industry within the United States today. The General Electric Corporation, for instance, has established TEMPO as a subsidiary organization charged solely with the function of predicting and anticipating the future. The Ford Foundation has established an organization entitled "Resources for the Future" with an identical

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function(16). A significant contribution in this area was made by a committee report of the California Association of Secondary School Administrators in 1968 in which the educational implications of concern were examined and reported(3). The CASSA study utilized the willing cooperation of representatives from the Rand Corporation, TRW Systems, Xerox, Southern California Edison, North American Aviation, Kaiser Foundation, and other representatives of private industry in its analysis(3). A similar study, directed by Edgar Morphet, is being conducted by an association of eight western states. The Morphet study has the potential of having great impact on education and its inevitable change(16).

In short, the business of prediction is serious indeed, and is not taken lightly by the forerunners of industry. It behooves the educational establishment to consider this most vital area in the same light if it is to maintain its relevance in the year 2000.

THE WORLD OF 2000 A.D.

The predictions listed below may jolt us a bit at their reading. They are not the products of fantasy-oriented speculation but products of the research and considered thinking of some of the best scientific, academic, and business minds in the world today. Although there is considerable philosophical dispute as to the implications of technological change, there is little argument that technological changes will increase in number and in scope by exponential proportions in the years immediately ahead. Some of the more significant and well-documented change predictions for the year 2000 are listed below.

Technology

By the year 2000, a major proportion of all power plants either in operation or in developmental stages will be based upon nuclear energy (4,8,17,13). Environmental problems caused by the internal combustion engine will be eliminated through the operation of small powerful engines operated by storage batteries with capacities far beyond those possible at present (13). The laser will find common usage in communications, in surgery, and in newly developed micro-welding processes (26).

Automatic factories in which human employees will serve only in maintenance and in programming capacities will be common(13). The increasing use of computerized account systems will have relegated the use of currency or money to only nominal usage(8). Menial tasks such as househould cleaning, window washing, refuse disposal and mowing the lawn will be accomplished through use of robots in some form(8). In the field of education, automated information storage and retrieval systems will be in widespread use(8). The scope of

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computer capabilities will encompass more and more of an area previously limited to human intellectual activity (3). These activities will include automated language translators, air traffic control and basic factual decision making (8).

Within the next several decades, the problem of water availability will increase although some hope for solution can be entertained in the areas of: a) desalinization processes made feasible through nuclear energy, b) more efficient means of water storage, c) the use and re-use of water for industrial purposes, and d) the development of processes whereby water must be returned to river or lake as free of pollution as when it was taken out (13). Smog will continue to be a problem until citizens demand that smog producing practices cease. Smog will eventually be controlled largely through the reduction of combustion as a source of energy(19). The mean temperature of the world will increase by as much as 10° F due to carbon atoms in the atmosphere (18).

By the year 2000, some scientists feel that man will be able to control weather and climate and to make effective use of artificial rain (25). TEMPO scientists predict that climate control will operate in a spectacular fashion which might allow desert areas to become arable and fruitful (25). One caution in this area is that political and economic pressures could prevent weather control on a major scale even though technology will be available. Improved and more reliable weather forecasting, however, will enable man to avoid many dangers and disasters (19, 5).

Natural Resources

The world's imbalance of important minerals and the staggering drain on mineral resources caused by increasing population might, by the year 2000, be remedied, in part, through mining of the sea for mineral substitutes (14), cheaper methods of mining low grade minerals, and reclaiming minerals from junk (23). Coal, no longer needed for fuel energy, will play an essential role in creating new textiles and plastics (25).

Problems of Population

The population explosion, which is upon us, makes it imperative that means be provided to expand food production; this problem can reach virtually unmanageable proportions by the late 1970's. It will be incumbent upon the United States, Canada and Australia to feed the world or to help the world feed itself during the period 1975-1995 (10). Asia, Africa, and Latin America may increase their production, through the use of fertilizers, from 4 million tons per year to 30 million tons by 1980. There are, however, other contributions our technology can make to the world food problem of the next twenty to thirty years. These include: 1) recycling cottonseed meal, corn stocks, and other residue back to livestock as feed instead of burning it, 2) reduction of food spoilage and loss to vermin and plant diseases, and 3) bringing one billion acres of land into production through irrigation and fertilization. We can give up processing plant foods through the domestic animal by going directly from the plant (i.e., alfalfa) to human protein food (10). Greatly advanced methods of food production are being developed including extraction of foods from the

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ocean, recovery of submerged lands, creation of artificial environment, and improved weather forcasting (17,3). The creation of synthetic foods, textured and flavored so as to be indistinguishable from foods we now know, will be produced from coal and organic wastes (1).

Materials

Among the technical innovations most likely in the next 30 years are extremely high temperature structural materials, improved super-performance paper and fabrics, and new or improved material for equipment and appliances (5). Within the next fifteen years new materials will change man's architectural structures, the design of his home and the clothes he wears (2).

Medicine and Health

By the year 2000, the transplantation of human organs and the insertion of artificial organs may be common and relatively free of hazard (25). Among developments which represent "unambigious progress" in the estimation of Herman Kahn, a member of the Commission on the Year 2000, are major reductions in hereditary congenital defects, relatively effective appetite and weight control, human hibernation for short periods of time for medical purposes, and controlled super-effective relaxation and sleep. In addition, there will be developments in new and more reliable drugs for control of fatigue, relaxation, alertness, mood, personality, perceptions, and fantasy (5). Genetic controls with influence over the basic constitution of an individual, substantial increase in life expectancy, postponement of aging, and limited rejuvenation as well as techniques for extensive and permanent cosmetological changes including features, figures, skin color, and physique will be in existence (5). Gene and chromosome control will enable this influence of form, color and character of future children -- man, by this time, will have the capacity to begin the direction of "his own evolution."(25) A most promising and interesting area of likely change involves improved chemical control for some mental illnesses and for some aspects of senility. There are encouraging predictions revolving around the diagnosis of infants retarded at birth and the possibilities for correction of their abnormality with appropriate treatment (25). By the end of the twentieth century virus diseases in children will be virtually eliminated, and the present menace of cancer may be a thing of the past (17,19).

In the year 2000, biological man will not be essentially different (4). It is already predicted that a central project of scientific research for the next four generations will concern itself with the genetic chemical nature of life and the ways of modifying it. This would involve the reprogramming of the chemical aspects of plants and animals and includes the whole area of the science of eugenics (13). Important discoveries in personality and behavior change will be made by scientists by the year 2000. The technology of personality change is predicted as follows: gene substitution is not likely to be an important problem until later in the century; gene selection by controlling mating is unlikely in the next thirty-five years; but nutritional influences of early life will be an important factor (4). There will be increased use of drugs and hormones in the developing child and increased use of drugs to treat or manage deviants. There will be radical modification of early environment and increased

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neurosurgical intervention. There will be radical environmental manipulation as a method of modifying personality in average individuals and we can anticipate control of human behavior by radical methods of psychotherapy in education (4).

Space Exploration

The Rand Corporation predicts that, well before the year 2000, progress in space will include the following: manned co-orbital inspection of satellites, a manned scientific orbital station, development of reusable booster launch vehicle, temporary lunar bases, manned Mars and Venus flyby, permanent base installed on the moon, manned landing on Mars and return, and the establishment of permanent research stations on near planets (8).

Transportation

Predicting changes in modes of public and private transportation is difficult because of the great variety of possibilities and the lack of agreement as to what the ultimate solutions of the transportation problem should be. The following technical capabilities exist, however: new types of air-borne vehicles, superhelicopters, vertical take-off airplanes, giant supersonic jets and new sources of power for ground transportation, fuel cell propulsion or support by electromagnetic fields, jet engine, turbine engines for trucks, new methods of water transportation including large submarines, flexible and special purpose container ships, more extensive use of large automated single purpose bulk cargo ships and inexpensive road-free transportation (5). The wheel as a means of public transport for long distance according to Rand will be replaced by a ballistic rocket capable of reaching any place on earth in forty minutes (8).

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The above listed predictions are cited as possible and/or relatively likely technological developments within the next thirty years. These technological changes have been kept separate in this discussion in order to point out the independence of their existence to the normal functioning of society. Technological change is a growing snowball, the eventual size of which is beyond our comprehension in terms of present day life. Our discussion, then, considers technological change as a given variable. This variable, with which we must deal, forces the adaptation of our world, as we now know it, to modification in order to utilize these changes for the benefit rather than the eventual subjugation of mankind. We must remind ourselves once again that the anticipation of change is a necessity lest we find ourselves, as the Shafter cow, being swallowed up with only a small portion of our societal anatomy remaining above ground.

Man's Position in the 21st Century

What then, are the predictions for change in societal, political, economic and educational patterns that gives us bases for anticipation?

Our society of the future will have several basic characteristics. Travel and communications, regardless of specific details, will shrink the world to a fraction of its present size. The indisputable population growth will force all of our society of the year 2000 into an increasingly compact system of inter-relationships in which human relation factors, even more than now, will determine survival itself and will be, perhaps, the controlling elements in the ability of mankind to provide the individual

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satisfaction with his life. Systems of values and ethics in such a world must be the subject of major concern, investigation, and mutual agreement in the compacted world of 2000. By this point in time, if not before, mankind will have found it necessary to re-evaluate his role and function in terms of meaningful activity and purpose. It is very likely that it will become increasingly clear that problems of ethics will be the basic problems of survival. One cannot help but be reminded with some uneasiness of the Elois of H. G. Wells' Time Machine. These beings lived in a world of the future in which physical need, discomfort and inconvenience no longer existed, a world in which all necessities were provided, but a world in which a purpose for life no longer existed. The citizens of this world had become intellectual and moral non-entities; the satisfactions of learning and production no longer existed and death itself was regarded only with vague puzzlement since these beings no longer retained any capacity or desire to understand. An equally disturbing fictional representation of the future was conveyed with some impact by George Orwell, in the novel 1984 in which total thought control had been imposed upon humanity. The term "1984", as we all know, is now commonly used in reference to existing societal trends.

We must take our obligation to cope with technological change seriously enough to avoid the eventuality of either of the two frightening experiences as pictured by Wells and Orwell. What, then, are some of the serious predictions for societal trends in the thirty years to come?

Social Change, Economics and Government

First, in terms of government, it is likely that within the United States there will be a shift from federalism toward a unitary government and more power will likely be given to the central government (13).

It is likely that business and government will have entered into a partnership based upon interdependence rather than upon competition, and that large scale rather than small scale operation will characterize virtually every aspect of productive and social enterprise. A corollary to this trend is the likehood of increasing collectivization and increasing government control of our economic system (21). The end of bureaucracy, as we now know it, is likely to be near by the year 2000; low level decisions that are the function of a bureaucratic structure can be taken over by the computer which is eminently more capable of making factual decisions. This will, in turn, place basic decisions, too ambigious for the computer to handle but revolving around questions of values of ethics, in the hands of a diminishing few.

It is likely that the growing trend toward the invasion of privacy will reach proportions of major concern, necessitating changes in habits and modes of living. A familiar example is utilization, by the federal government and by private business, of the individual social security number for the purpose of computerizing data relevant to any one individual.

Methods of systems analysis, already employed by business and government, will be commonplace in the application of the products of science and technology to everyday living. Increased attention will be paid by both private and governmental institutions toward research on community needs and methods for elimination of the problems of urban coexistence.

The effect of change upon our social structure is likely to be intense. Lawrence Frank stated in the report of the AASA "Commission on the Year 2000" that, "Ignoring the dynamics of social change arising from discontented people, while assuming that social changes are due primarily to technological innovation, may be one of the major errors of today." He goes on to say that "most social changes develop not from immense new innovations in technology, institutions, or doctrines, but from demand for diffusion of existing goods, services, and privileges from the few to the many." The CASSA report "Education Now for Tomorrow's World" points out that increasing affluence and better education will accelerate the demands of the "have nots" for an improved standard of living. "As the history of affluence shows, people learn rapidly to take for granted the new heightened level of living; what begins as privilege usually becomes a right."(4)

What are the predictions in the area of social structure? Proverty could very well be almost eliminated by the end of this century within the United States and there will be an increasing demand for more services from the government. These public services will be provided from funds raised on an increasingly non-local fiscal basis. There is some question in fact, whether local government will continue to play a role or if it will be bypassed. Per capita consumption within the United States by the year 2000 is estimated at approximately eleven thousand dollars per family with personal income likely to have doubled (4,7). Equality of education, work, and housing could very well have been achieved by this period in time, and even though some predict that racism will have been eliminated on the basis of economic and social necessity, full integration in terms of changed attitudes on the part of the public is doubtful (13).

As the plight of minorities, and in particular the Negro, improves, other groups such as youth, the aged, and women will make increasing demands for equal rights, privileges, and the opportunity for greater participation in the decision-making process (3). By the year 2000, there will be more equality than exists now and the individual goal of enormous personal wealth will no longer be a major concern for participants in this society (4). As some of our current-day values begin to dissolve, there is likely to be a broader interpretation of the concept of dependency; those physically and mentally unable to cope with the problems of society will be afforded greater governmental protection. As diseases are eliminated and life is prolonged, medical services and public health will become major functions of governmental organizations (13).

A Changing World of Work

The basic structural changes in the world of work will provide some of the most disturbing problems in terms of individual role and function within our society. As industry becomes increasingly automated, we will see a definite trend toward the disappearance of the industrial society as we now know it (4). Plants and factories will tend to move toward rural areas to avoid "metropolitan suffocation" (19). Although the products of agriculture will increase considerably, the work force necessary to maintain this production will be cut approximately in half (4). By the year

2000, there will be a considerable increase in the professional and services occupations. Anticipated is an increase in the need for teachers, engineers, foreign language experts, personnel, scientists, phychologists and those in health services; but fewer will be required in the fields of business and commerce as we now know them, and in the fields of journalism and religion (13).

As the amount of work required to produce a given unit decreases, the work week, now considered normal, will be diminished considerably; a twenty-eight to thirty hour work week, at the most, is anticipated. As the increase of technical types of jobs available will change on a continuous basis, the concept of "career cycles" will be considered seriously; it is likely that during a given lifetime a person will pass through several careers. As the economic and job needs of society change rapidly, work may very well become a privilege and not a necessity (8). these trends grow, it is anticipated that recreation will become a major indistry within the United States with an approximate five hundred per cent increase in the use of recreational facilities (4).

When we compare the world of 1850 with the world of 1969, in terms of our regard for the sanctity of work, we can see a decided shift in the interpretation of work as the purpose of life (4). This considerable modification has already caused a great deal of psychological disturbance. Continued modification of the role of work and the place of the individual in society will require a soul-searching re-evaluation of our societal values if the individual of the year 2000 is to find satisfaction in his existence (17). If these predictions come to pass, psychological, moral, and physical re-orientation to a world of leisure will become a necessity. It is possible that by the year 2000 recreation and education will be the nation's two major industries.

Population Compaction in America

By the year 2000, a conservative estimate indicates that the population of the United States will be approximately 311 million, and a decided shift to the western and southwestern states is anticipated. By this time, approximately five-sixths of all our population will reside in urban areas on two per cent of the total land mass. One-half of our population will, most likely, reside in twelve states, or ten per cent of our land areas (4,19). As a result, the problems of our present cities, and cities now only in initial stages of development, will become immense (4). Radical reconstruction of urban areas, already begun in some areas of the United States, must be continued and accelerated (3).

The Political World of 2000 AD

It is particularly difficult to predict and anticipate the world of international relations thirty years hence since any discussion involving ones' native land is particularly wrought with emotional overtones. Some of the predictions listed below, consequently, will be encouraging to some and discouraging to others; few, however, are satisfied with the status quo and expect no change to take place. Political predictors indicate that there is an eighty to eighty-five per cent chance that there will be no major war by the year 1990. The same predictors state that, with adequate policy planning, this chance could be raised to ninety-eight per cent (8). They feel, however, that hopes for total disarmament

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during the coming 30 years will continue to be hindered by mutual distrust, although the total expenditure of funds for arms will decrease (14). It is to be anticipated that by the next century a strong coalition of industrial free nations such as the United States and Japan will maintain a peaceful co-existence with Russia and China. Eugene Rostow and others have predicted that this coalition will assume the burden of supporting underdeveloped nations. If this peaceful coalition occurs, there will be no general war and a significant gradual transformation of communistic societies will have taken place (3). The cold war, by this time, will have become little more than "shadow boxing", similar in structure and effect to the Protestant and Catholic struggles of the past (8). Huntington predicts that American power by the year 2000 will be in a state of deterioration in terms of world dominance, and that communism will have experienced major transforming upheavals. Europe will have experienced a significant trend toward unity on a federated basis and Africa will be characterized by a regional federation. The United States and Russia will have achieved a nuclear understanding to maintain nuclear polarity. There will be an increasing understanding of the need to get India and Japan in agreement with the major powers in order to avoid a color split in which the white nations will stand against the rest of the world. The eventual decline of the United States influence in Asia will have taken place by the year 2000. At this time, it can be anticipated that a Japanese-Chinese coalition will have taken place, a coalition which will constitute a most formidable power (3).

In summary, it can be anticipated from the predictions for the year 2000 that our world will be one of increased unity and that the rudiments of world government will have been established by this time (19).

Education in the World of 2000 AD

Ferdinard Lundberg, in his book The Coming World Transformation, written in 1963, states that the future lies with science, education and technology in the order given. The AASA report states that the most distinctive character of our society is, and will become, education. The report goes on to state that intellectual institutions may well become the single predominant institution in our society. As an economic corollary, it has been stated that the citizens of the year 2000 will be much more concerned with education than with capital accumulation (13).

The statements above indicate that the function of education will indeed broaden in scope within our future society and implications are rather clear that education can no longer afford to be a reactive mechanism to the ill-defined and vague expectations of society. Education must anticipate, act, and lead. The challenge that faces education must not be considered as a challenge in a game of societal chess in which the loser is able to shrug off his defeat as an insignificant setback, but, the challenge must be likened to that of a medieval joust in which the vanquished all too often did not survive. What then is the nature of this challenge which faces education? What are its boundaries? What will be the tools with which we work, and in what ways must we modify what we teach and how we teach in view of the implications of technology and the inevitable social change?

Firstly, in overall organizational structure, it is predicted that as government and business combine, a third member will be education. Colleges and universities of the future will tend toward concentration of function and specialization far beyond that which we have witnessed to date (4). Colleges will serve students who, rather than being drawn generally from the upper-middle class without consideration of intellectual ability, will comprise the most able intellectuals from all classes (13).

Secondly, regarding the function of education, one of the most significant changes will be the acceptance of the concept that education is a lifelong process and that the formal educational organization must provide the keynote for its effective operation. It is anticipated, furthermore, that, as the function of education changes in the economic system, the concept of payment of youth to attend school will become accepted. It will not be uncommon in the year 2000 for students from the ages of fourteen and above to receive a salary as though they were employed in private industry(11). It should be noted that this constitutes a philosophical acceptance of the concept that education is indeed a productive function in society.

Education for a World of Leisure

A consistent theme throughout the literature of educational prediction concerns itself with the theory that the societal balance of work and leisure will be modified considerably in years soon to come. As the futurists see it, "Automation will cut down considerably on the need for a work-force; so we will have a society where 'non-work' as we know it will be enobling, and where a person may dedicate his life to other people rather than to the manufacture of material things....in the manufacture of material things, an electronic elite work force will be needed - skilled specialists and technicians will still be utilized, but unskilled labor will not be needed." (17,19,21) Education may then concentrate on encouraging people to develop intellectual interests, not just prepare them for materially productive or non-productive work At the present time our society, although less so than in years past, considers leisure largely a waste of time - unproductive. A major responsibility of education in the year 2000 must be to provide mankind with a sense of value in the use of leisure time through pursuits revolving around interhuman relationships, such as the arts, aesthetics, athletics and fine arts (4,5).

Vocational Training

The world of work will be modified considerably and since many of the occupations that now exist in great quantity will not exist in the year 2000, the nature of training for work must be changed radically. As the gap inevitably widens between supply and demand in technological manpower, the concept of educating the worker for a career sequence becomes more imminent. Education for work must be education for change, not education for a specific skill.

Technology in Education

The computer, one of many technological tools of the future, has had an initial impact upon the educational process. Computerized storage and retrieval of information, programmed instruction, refined techniques of audio visual instruction, and computerized data systems are already with us and are, at the present time, integral parts of the functional operation of many school districts throughout the United States (8,5). These advances, as a matter of fact, provide a meaningful example of the lag between effective utilization and technological capability. Individualized instructional carrells utilizing the latest in technological teaching aides are now in existence throughout the United States. The beginning planning stages have begun through the Eight State Study (16), which will lay the groundwork for a centralized information and data storage center. This center will feed information through a permanent satellite directly to thousands of individual classrooms and individual student carrells throughout the Rocky Mountains and Western States. Already in operation, throughout the United States, are educational TV stations which have the capacity to direct centralized programming into individual schools in regional areas (5). The capacity to direct educational programs into individual homes now exists, and predictions are that formal school organizational patterns are likely to be seriously influenced as a result of this potentiality (8).

Behavioral Change

By the year 2000, it is anticipated that applications of research in the processes of chemical change to learning and memory will have developed to the point of practical utilization. Radical methods of psychotherapy, moreover, will be employed within or through schools. This may bring about elimination of behavioral abnormalities that now plague the efficient functioning of the typical school and the effective learning processes of all too many students within them (5).

Responsibilities of Education

In 1918, the Commission on the Reorganization of Secondary Education defined the functions of education as:

1) worthy home membership,
2) worthy use of leisure time,
3) economic efficiency,
4) command of the fundamental processes of learning,
5) ethical character,
6) civic responsibility.

These "Seven Cardinal Principles of Education" have stood, since this period of time, to serve as the basic outline of the responsibilities of education. Considering the implications of the future and the world as it is changing, it is now necessary to take a hard look at these principles and to elaborate upon them in terms of current-day needs and trends. Although the CASSA study on Education Now for Tomorrow's World was not a specific commentary on the cardinal principles, the fifteen responsibilities of education defined within the study are closely related (3). The CASSA report indicates areas that are particularly in need of elaboration or stress. After an analysis of predictions for the future similar to that contained in the material above, the CASSA committee declared fifteen responsibilities of education in tomorrow's world . (The parallel cardinal principle of education is placed in parenthesis after each as pertinent.)

1) to provide opportunities for understanding and appreciation of the need for individual flexibility in an atmosphere of change,

2) to develop in youth an attitude of inquiry; to teach the process of problem solving and decision making as distinguished from the storage of facts,

3) to continue training in the basic tools of learning (command of the fundamental processes),

4) to develop a curriculum where the criterion for priorities is based upon relevance to contemporary and future needs of youth,

5) to prepare youth for a changing world of work (economic efficiency),

6) to prepare youth for responsible participating citizenship (civic responsibility),

7) to provide preparation for productive use of leisure time (leisure time),

8) to extend and emphasize the teaching of the fine arts,

9) to teach civilized human relations,

10) to build bridges to an understanding of all peoples of the world,

11) to assist youth in developing moral and ethical guidelines (ethical character),

12) to prepare youth to understand and deal constructively with psychological tensions,

13) to assist youth in developing ways of insuring individual privacy and worth in the world of increasing group activity and social supervision,

14) to provide opportunities for study and understanding of urban life and problems,

15) to develop an instructional program in school that fully utilizes information sources and agencies outside of the classroom.(5)

It is interesting to note that the CASSA committee excluded from specific reference two of the cardinal principles, that of health education and that of worthy home membership. It may be assumed that these two principles are included generically within the other fifteen, or it could be reasoned that their elimination was intentional. The committee could have assumed that health education could become, within a period of thirty years, less of a factor in the educational process given the likely elimination of virus diseases, and the effect of technology upon processes of maintaining health. Or it might also be conjectured that the changing role of the family, although not discussed within the document, might render the function of formal education less important in this area.

Several of the cardinal principles were modified in emphasis.

Responsibility Number 5, for instance, indicates an emphasis on the changing world of work rather than simply economic efficiency, e.g., material provided in the CASSA analysis emphasizes the concept of "career cycles". Likewise, responsibility Number 7, involving leisure time, emphasizes the need to train specifically for profitable use of leisure time in terms of other than just play activity.

Responsibility Number 11, involving development of moral and ethical guidelines, emphasizes the need to concentrate and to assist the individual to learn value systems, to evaluate them and to develop an operational ethical value system for himself (3).

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Several of the CASSA statements of responsibility are unique in their emphasis. Numbers 1 and 2 clearly define the need for individual flexibility in an atmosphere of change, the need to develop an attitude of inquiry and to teach the processes of problem solving and decision making rather than simply the storage of facts. The document states that the latter is a task of all subject matter areas, not just science (3).

> While no one denies the importance of acquiring basic facts in a subject area, the body of factual knowledge in any one subject area has become so vast that the average individual cannot possibly store in his memory any significant part of the information available nor is it even necessary to store this information in the memory when automated retrieval sources provide it at the push of a button. The storing of information becomes less valuable than knowing the process for finding it... the process of problem solving and critical thinking will be needed by youth not only for making a living in this technological age but also in seeking solutions to the vast social problems that will be a part of this world in the future. (16)

Responsibility Number 4 emphasizes relevance of education in that we can no longer afford to keep courses in the curriculum only out of respect to tradition. New courses must be developed with the full understanding that they may be eliminated later as their usefulness fades (3).

Responsibility Number 15 recognizes the inevitable fact that education must become a community process rather than a specific function relegated to formal public educational media.

CONCLUSION

The process of prediction, as previously stated, if not coupled with the intent and desire to anticipate, becomes little more than an academic exercise. The need for this prediction and its anticipation is

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made all the more significant by the documentable fact that predictions of the future have tended to have one thing in common - their realization came faster than had been anticipated.

Elbert Rosenfeld in an article in Life magazine in the year 1965 stated,

> Once a scientific discovery is made, once it can be applied with reasonable safety, those who need it use it. But there is always a painful lag before the mechanisms and attitudes of society catch up with the new reality that science has wrought. As man's power to control life accelerates, this kind of lag will prove to be more than painful - it could be castastrophic. The lag has been tolerable until now only because the problems so far raised are childishly simple and straightforward compared to the brain-cracking complexities which are soon to be thrust upon us -- legal, social, ethical, moral, aesthetic, philosophical, religious. The lives of man will undergo transformation so drastic as to constitute a whole new world without precedent in human history. (22)

This section of the master plan report has been an attempt to provide a basis for anticipating that which is predicted by some of the best minds in our society today and to outline the implications of these predictions upon the educational process. Several of the predictions are disturbing, others are extremely gratifying. History may prove some of the predictions to be nothing more than vague speculation; many will come to pass well before our target year of 2000.

There is still another dimension to the process of looking into the future. In this regard, Albert Rosenfeld says:

> Scientists tend to agree that some of the most exciting future developments will come out of insights and discoveries yet to be made with implications we cannot foresee or imagine, so we live in an era where not only anything that we can imagine seems possible, but where possibilities range beyond what we can imagine. Even the scientist cannot give assurance of what is really going to happen. (22)

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II. A SYSTEM OF MANAGEMENT ACCOUNTABILITY

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> "Control is the process of checking to determine whether or not plans are being adhered to, whether or not progress is being made toward the objectives and goals, and acting if necessary to correct any deviations. The essence of control is action which adjusts performance to predetermined standards if deviations occur...."
>
> -- Robert N. Anthony
> Planning and Control Systems
> A Framework For Analysis

A SYSTEM OF MANAGEMENT ACCOUNTABILITY

Within the past five years, a number of concepts have emerged which call for a totally new approach in our established educational efforts. The ideas imbedded in these concepts are not particularly new, but societal changes, developments in educational research, and fresh tools for planning and management have opened up entirely new possibilities for schools. These concepts have profound implications for the programs, personnel, and material resources of a school system. Some of these concepts are now presented in abbreviated form.

Equality of Opportunity

A new perspective has emerged with regard to the meaning of equal educational opportunity. In contradistinction to the idea of providing a uniform type of experience for each pupil, a new realization of the need for diversity has come through very strongly. The gist of the new and compelling concept has been stated succinctly in a recent statewide study of education in Oregon:

> But men are not equal in their natural endowments. Nor are they in their potentialities, and education is incapable of making them so. Hence, we are faced with the interesting paradox. If we are to provide citizens with equal opportunity to develop their abilities to the limit of their capacities, we must offer them a variety of different and, in a real sense, unequal educational opportunities. For there is no greater inequality perpetrated in an educational sense, than when individuals of unequal ability are treated educationally as if they were equals. (3:403)

This principle has profound implications for change in American education, not only for changes in state apportionment laws and formulae,

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but for sweeping changes in local district policies that affect individual schools and programs.

Basic Values and Purpose of Education

Philosophically, schools must be in harmony with the basic facts of pupil development and the value structure of American society. At least four key values need mentioning here, not because they are new, but because societal changes call for a re-emphasis of these values in the changes that are to come to education.

1. Each individual has worth.

    With few exceptions every person is an asset, or may become an asset, to our society. This simply restates that the pivotal idea in the American value system is the supreme worth of each individual. Not only does our society count each person as an asset, but indeed the worth of every individual in terms of educational attainment may be evaluated. Thus, a group of individuals — in a community, a state, or a nation — can be collectively assessed in terms of educational attainment and value.

2. Education adds value to a person.

    Education is the process that enhances the knowledge, skills, habits, attitudes and styles of a person. Man becomes civilized through education, which calls for a disciplining of the individual in his relationships with others, according to the habits, beliefs and rules of society. In this way education stimulates and directs the individual unfolding of personality and intelligence. Thus, education is the means of increasing the value of an individual to society.

3. Each person has measurable potential for educational attainment.

Complete recognition must be constantly given to the current exciting and significant research on human growth and intelligence. This research must be viewed in terms of ethnic, cultural, socio-economic and other factors of possible influence. The emerging results of this search may admittedly cause modifications from time to time in concept and in means of measurement. Nevertheless, every individual has an apparent educational potential that may be generally determined during the earlier and later years of his formal school experiences. The tools presently available for assessing this potential are imperfect. However, progress can be made by capitalizing on the "present state of the art".

4. Key responsibility rests with the state and local education authority.

It is legally and morally incumbent on the organized education authority to assist each person as fully as possible in the realization of his apparent educational potential. This assistance includes helping individuals to overcome deficiencies and thus increase their apparent potentials. Such procedures constitute genuine efforts to maximize the individual's contribution to society. The purpose of the school is thus to assist children in becoming productive, socially constructive adults who will be assimilated into, and at the same time enrich, our society.

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Keystone Concepts of Pupil Success and Development

A number of important insights or principles concerning pupil development and success need to be constantly kept in mind as schools take on new directions and make improvements. Five such concepts are summarized as follows:

1. Variability of pupils.

   In every case the improved measurement of school operations involves a recognition of the great variability among pupils. In some cases, the variation is measured in socio-economic status, in others, intelligence quotients. In still others, the variation is measured in prior school work, teacher judgment, and ability for sustained drive.

2. Success: a mosaic.

   Effective school measurement involves detailed specifications and measurement of these details. School success is a mosaic of many small achievements rather than one overriding gain. Most schools do some things well and other things not so well. Determining these deficiencies and overcoming them provides a continuing challenge to school management.

3. Prerequisite learnings.

   Each child is a developing being: he must attain one skill before advancing to other, more complex skills. Thus, learning experiences can fit together as a string of pearls. It therefore appears advantageous to consider each pupil on the basis of longitudinally compiled data. Pupil records should reflect this kind of longitudinal measurement.

4. Simultaneous measurement.

School programs provide a variety of experiences with different emphases at different times. Measuring pupil attainment requires that a totality of measures of the many dimensions of pupil development take place simultaneously. Only in this way can observers determine that a renewed emphasis on one dimension does not cause a deterioration in some other important dimension.

5. Structurally independent.

The measurement system must be independent of a school structure in order to properly assess the product of innovations. This involves basic independencies of the measurement system from grade or subject structure and requires that all measures be made on absolute standards. Such a provision also allows greater freedom to group pupils without worrying about the effect on the measurement scheme.

THE CHALLENGE FOR EDUCATIONAL MEASUREMENT

Many educators have argued that a child's progress should be judged against his former status rather than in terms of his relative position in a group. Educators have also argued that each child should be allowed to develop educationally at his own speed, and some schools have hopefully experimented with so-called nongraded operations. These ideas have great appeal, and strong arguments can be advanced in their favor. Actually making them work, however, has been difficult in the existing framework of educational measurement. Some new concepts in terms of classification of pupils, new types of pupil records, and the concept of absolute rather than relative standards for pupil achievement lend new possibilities for reaching these objectives so long advocated by educational leaders.

In addition to the elements that improve measurement, some new postulates of school management theory have been added. One postulate centers on the development of a cost accounting system that will permit cost-benefit effectiveness comparisons. For the determination of unit costs, some measurable unit of production must be defined. In education, no usable unit of production can be defined until the progress of individual pupils is measured. Thus, another challenge for effective measurement in schools is identified. Providing ways to meet these challenges will now be discussed.

The Importance of Pupil Classification in Following the Development of Each Child

The classification of pupils by their important characteristics is vital for modern school management. In many attempts to use present educational data for management purposes, some faulty assumptions have frequently been made. For example, when average results are obtained for a group of pupils, the results are assumed to be reliable. This assumption can be very much in error. The assumption implies that students are essentially alike, varying at random or by chance. Actually, pupils are quite different, each with important, unique characteristics.

Since each child is different, generalizations do not have enough precision to meet the modern challenge to educational assessment. The growth of each individual child must be assessed. The school management system must, therefore, follow each child and report on success and failure in his meeting prescribed objectives.

Many, perhaps most, children will reach satisfactory standards easily and most schools will have to accept this achievement level as a reasonable goal. The children not meeting objectives must be identified as individuals and the reasons for their failure must be diagnosed and corrected. Corrections must be prompt because the child is a developing organism and failure at one educational level may result in cumulative distortions. Therefore, evaluation of pupil development must be continuous, with prompt corrective action as failure is noted. The evaluation of the school or system is another problem and can generally be determined by summarizing the cumulative development of groups of children.

Because of the broad range of individual differences, the treatment that may be good for one child may be very harmful for another. In many instances in our schools special treatment for a very broad group of children is designated. For example, one group may be identified where each member of the group qualifies by being more than two grades below normal in reading and then all of these youngsters are given a rather uniform treatment for corrective purposes. Such procedures are grossly inadequate from a management point of view. For a clear-cut report that will facilitate decision making, the classification must be refined to a point where all in the classification are approximately compatible. Therefore, when a policy decision is made in school,there must be a close scrutiny of it to see that it does not have a reversal or opposing effect for some pupils. Sound decisions in education require that children be sorted by characteristics and the effects measured for each kind of pupil.

This is an apparently simple change in the pattern of thought, but in practice the usual school staff is unable to recognize the critical variations. Nor do the schools have the instruments or techniques for measuring these variations, nor money to make the measurements recognized as significant. Thus, makeshift devices must often be used for the identification of pupil classifications.

Whenever possible, youngsters should be grouped by developmental stages. These developmental stages provide a model of the expected development of all children. Variability may occur during the age when each stage is reached, or in some children there may be an omission of a stage. By using the concept of stages, one can predict the development of a pupil and compare actual results to predictions. This allows a classification of children into (a) those developing as anticipated in accordance with their potential, and (b) those not so developing. In any event, it is essential to classify pupils to the point that significant differences appear and thus significant differences in expectation can be cited.

The Use of Longitudinal Records

Each child appears to follow a unique developmental pattern, however, such patterns can be classified into general types. Many of the characteristics of a child's developmental pattern are laid down very early in life.

But, environmental forces can modify this pattern. In order to fully evaluate any changes in the environment, one must necessarily make some kind of estimate of the longitudinal patterns of growth of the child. Thus, the identification of developmental patterns is an important element in any classification scheme for pupils.

It is generally recognized as common practice to maintain constant pupil progress expectations. Most school teachers expect the children who have done well in the elementary school, for example, to do well in junior high and in senior high. In practice, there are so many exceptions that this pattern of expectation appears to be defective. One New York State study, for example, showed sizeable differences in the proportion of children doing good work in high school who had done good work in elementary school (1).

The general idea in the use of longitudinal pupil records is to help schools adjust to the needs of individual pupils. When children fail to develop in accordance with any one of the usual models, one must then try to find out the reason. The model should account for usual pupil differences so that departures from the models are indicative of probable school failures or needs for special treatment. Therefore, as a general rule, schools should have a plan or model for the development of each student. As long as the student is developing in accordance with a satisfactory model, the school manager can be reasonably content. When substantial portions of students are not developing satisfactorily, school management should feel under severe pressure to change either policies or practices.

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Use of Present Standardized Tests

Existing tests and resulting records are quite inadequate for modern school management purposes because they are normed to show the relative class placement of pupils rather than their actual capabilities. This comparison of relative position yields fair material for the middle group of pupils but may be quite misleading for those near the top or bottom of the class. Achievement tests used in most school systems are the basic pupil measurements available and thus, if operations are to be measured at all, tests must continue to be used until a change is made to an improved system based upon absolute — or independent — standards.

There are a number of difficulties associated with the standardized tests currently in use. For example, it is immediately apparent that very few schools are comprised of children who match the composition of the national sample — the criterion score. Even though the courses offered are similar enough to create much uniformity in program content, it takes but a moment's reflection to realize that there are significant differences among schools in staff, pupils, materials, resources and educational objectives. Any one of these would warrant considerable diversity in measured student achievement. Each school district, each school, and each class is comprised of children of varied abilities and backgrounds upon whom school personnel and course content produce diverse results. It needs to be continually emphasized that useful productivity comparisons can therefore be made only if the input units compared are quite similar in composition, and were subject to similar process based on the same objectives.

Existing achievement tests are not suitable for establishing developmental models or patterns. Even for the subjects they cover they measure how a child is behaving in comparison to other children in his grade. In other words, achievement test scores and norms indicate how the child is doing the work normally required at a specific grade level rather than indicating the specific competencies and abilities the child has acquired. By way of illustration, if all children at a particular grade level developed one grade level per year, then the student at the bottom of the class on the normative pattern also gains one grade level per year. Realistically, however, if the students at the bottom of the class learn very little the gain is near zero. Thus, for the extreme case at the bottom of the class, we really know nothing concerning his development except that his achievement level is chronically low.

The Need for Absolute Measures

Theoretically, the pupil record file should indicate where pupils are in the curriculum; just what they have learned. Few pupil record files do this because the tests given merely establish rank order. As a result, if a child learns very little, all we know is that he is low in the class. Few measures are, therefore, available that help us to establish landmarks for guidance purposes.

In order to really know where a child is, for guidance purposes, one has to know the precise things, prerequisites, that he has mastered. One needs to know also the precise things that have not been mastered. Few schools ever look for these kinds of information in absolute terms. Satisfactory school measurement must provide a clear determination of individual pupil progress, not distorted by what happens to other students.

If the achievement test items of the present standardized tests were grouped by the developmental stage in which they are normally learned, and scored by finding which items the pupil performs successfully, they could become absolute "go or no-go" gauges. They would then define where the student is to the extent that the achievement test items adequately cover the expected attainments. Thus, the individual achievement test items themselves would be usable gauges. The difficulty occurs in the norming procedure.

While progress can be thus identified in terms of some elements of the relative measures, such as the items on the Stanford Binet Intelligence Test, the ideal test is one that yields an absolute measure, a "go or no-go" gauge. It is not essential that the items be grouped to yield a scale. It is enough if they indicate where a child is on a descriptive developmental pattern. They must yield an absolute standard that measures the achievement of the individual child without relating to any other children.

Any one absolute measure may be very simple. For instance, a school manager should know how many of his grade school graduates could carry out a simple written instruction, if given to them. For example, how many could go to a designated grocery store and buy a can of sugar-free apricots and bring it back to the school? This is an absolute standard test. It corresponds to a go or no-go in manufacturing. It is similar to the kinds of requirements used in the program of the Boy Scouts where the tenderfoot badge indicates certain absolute attainments that the individual boy has accomplished. These also serve as go/no-go gauges, for the boy can either tie eight knots or he cannot. He has either learned to say the Scout law perfectly or he has not. And so it should be for each criterion.

The ideal measurement system from a management viewpoint is the go/no-go gauge that says the pupil can do a certain thing. This immediately makes the marking of an individual a process involving the pupil and the gauge and nothing else. The group is not involved. When measurement is on a truly individual and solid base, a child can be allowed to move at his own rate without disturbing the entire management measurement scheme. The grouping of pupils can then be adjusted to measure other than those of academic achievement.

In order to establish reasonable goals for each child, different standards of progress must be set for children with different characteristics. The present standardization system which shows a relationship to the average child must shift to specific, absolute, and verifiable objectives by the type and age of child. This will focus much more attention on the characteristics of the individual child and will yield absolute standards. Such standards will have more meaning than present norms as far as the public, lay school boards, and legislatures are concerned. These standards create definite anchor points for managerial discussion and decision in place of the elusive relative goals currently in use.

It is significant that the Joint Committee on the National Assessment of Education has been completely cast in the mold of measuring absolutes.

SCHOOL MANAGEMENT FOR QUALITY ASSURANCE

One of the important reasons why schools have failed to adopt scientific management methods is the complexity of the forces operating in any school situation. In industry, specifications are easier to write out, operations are repetitive and can be made uniform, and the production cycle is short, often a few minutes, a few hours, or a few days. Schools on the other hand, are dealing with people who take years to develop through the production cycle from infancy to adulthood. A definition of segments of childhood and adolescence is difficult and the segments do not occur by the calendar. Yet every segment interlocks with every other segment and it is practically impossible to run a controlled operation because of the difficulty of isolating the multitude of operating forces.

Some useful concepts and principles, while by no means foolproof, can help schools to be brought under effective management control. These include a reliance on the twin concepts of (a) management by objectives, and (b) management by exception in the operation and control of the schools. These two principles, together with a quality assurance concept and the means of identifying significant variation, are discussed next.

Management by Objectives

Modern system management assumes that objectives have been established and thus management can focus its attention on the achievement of those objectives. Typically school systems need to give considerably more attention to the definition of objectives.

The overriding objective is the development of the individual in accordance with his potential. As already noted, it is very difficult to say for sure whether a man has developed in accordance with his potential. Observers can say, however, that a given individual is or is not a capable citizen or an effective employee.

This brings out an important point in terms of measurement and management by exception. One can quite generally establish whether or not a person posseses a specific characteristic or ability. In other words, one can carefully define a go/no-go gauge that will separate the "haves" and the "have-nots". The establishment of go/no-go gauges seems to be a promising way of defining objectives and one of the easiest methods to put management by objectives into practical use.

One of the first requirements of an educational objective is to find a way of specifying potential or of obtaining some suitable device to serve the same purpose. Thus, a school system should attempt to establish a minimum possible goal or potential for each kind of student group. This possible goal might be a reasonable and effective school objective. The critical point to be made, however, is that the objective must be stated in terms of an attainable goal. An attainable goal can be defined as the achievement actually obtained by the institution or a similar institution with a like group of children.

Thus, an objective must be stated with a clear system of measurement in the light of known characteristics of pupil response in whatever is being measured. The go/no-go gauge involves a clear system of measurement and the percentage of students actually passing the gauge in a good school

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is a known student response. This establishes that the goal is measurable and realistic. If one is in doubt as to the measurableness and reasonableness of the objective, one can almost always state it as a go/no-go gauge and use the gauge on existing pupils to establish a baseline percentage. The decision can then be made as to where to set the objective in relation to the baseline.

Objectives of this kind can be set at almost any level, either at broad terminal points or in detail along the educational cycle. The objectives have real meaning only as they are defined for children of a certain type. Characteristically, the per cent of failure on initial measurement will likely be much higher in the low socio-economic groups than in the middle and higher socio-economic groups. This leads us to emphasize one of the important concepts dealing with management by objectives. This concept, in whatever form it appears, is the variability of human beings and the necessity of classification to adjust accordingly.

Management by Exception

The measurable characteristics of an output such as pupil attainment are constantly varying. Few outputs in any field can be made so that all units are identical. Therefore, one can immediately abandon the idea of uniformity of output as a managerial goal. On the other hand, management cannot let the product vary without any control.

It is important to notice that major changes in quality can generally be traced to identifiable causes. Moreover, after these changes are weeded out, the residual fluctuations will have the characteristics of chance fluctuations. Thus, it becomes important for the manager to define the variations that can be accounted for by chance and to accept the idea that such variations are impractical to pursue. Management by exception consists of finding all variations exceeding chance and eliminating or accounting for them with the result that the residuals always stay within chance limits. Quality assurance in this context becomes a process of keeping records to make sure that no identifiable causes of variation are creeping in and destroying the stability or quality of the product.

In a school situation, this means that from a total array of measures and judgments to be obtained on pupils in order to assess their development and attainment, the school manager must determine how much variability is allowable and which is merely due to chance factors operating. Thus, the school manager must attempt to identify all the important forces operating in the school's area of responsibility and must seek to control the critical elements. In this process he must establish, through a statistical estimate, just how much variation in pupil progress or performance is to be allowed before some kind of signal is made that will bring the problem to his special attention. At such control points attention is to be brought promptly to bear on any significant deviation in status or progress that exceeds any chance limits.

In establishing tolerance limits and activating assessment mechanisms, the school manager automatically defines the special cases that need unusual attention or treatment. This is the essence of the concept of management by exception and it is these identified exceptions that require the principal's trouble-shooting skills, problem-solving techniques, and

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sound judgments and decision making. He has the responsibility for bringing available resources to bear in such a way as to move these exceptional cases back into the normal pattern of expectations or else revise the standards accordingly.

Quality Assurance Efforts

The essence of the quality assurance program is the identification of all important operating forces and their suitable control. This is really another way of stating that management must know what is happening within the areas of its responsibility, and must control all of the critical elements if it is to be in a position to define the product. Once management has control, it can ensure continued control by testing to be sure that all statistical measures stay within chance limits. In many cases the output may seem satisfactory by general observation when the statistical measures indicate a lack of control. Thus, the fundamental element in quality assurance is that it has a system of feedback that will promptly indicate when the quality of the output is fluctuating.

It should be noted that the introduction of a quality assurance program is very difficult. It is more difficult than the maintenance of such a program, yet most discussions of quality assurance deal with maintenance rather than introduction.

Identifying Causes of Variation

When a manager has found his operations out of control, he faces a difficult problem of finding the reasons. This operation is often called trouble shooting. There is no easy routine for doing it.

In general, the problem is similar in character to the search for new truth in science. Trouble shooting requires imagination, painstaking record keeping, and persistence. Some persons have more aptitude for it than others. Each school system would do well to find those in its organization with an aptitude for this work, and to use them.

To identify causes of variation generally requires classification of records by time, by characteristics of persons involved, (pupils and teachers), by school buildings, etc. It also requires one to identify where a departure from chance occurred and then to make a careful enumeration of the ways in which those affected and those not affected varied. The control chart itself is such a classification. Examination of the data will then provide insights and hypotheses, and these hypotheses can then be tested. When all non-chance variations have been eliminated, the institution is ready to operate a quality assurance program.

In describing above concepts and principles of managing quality assurance, no reference was made to controlling input. In fact, it was implied that the school manager must predict rather significant differences of input potential for children of different socio-economic levels. The significance to management is the imperative of establishing productive control by using predictive techniques.

It should not be assumed, however, that the school system's interest only begins when the child arrives at school. Improving input potential is a serious, but separate concern. It is probable that we have missed some of the most fruitful years in developing human potential if we said and passively accept whatever input potential occurs by enrollment time.

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A MODEL CONTROL SYSTEM FOR EDUCATION

This chapter, devoted to a model for education, makes an effort to adapt to educational practice a quality assurance model based upon the findings and methods prevailing in modern industry. Throughout the model there must be a continued emphasis on the following principles.

In testing, each child is compared only with himself. Marginal competencies do not count. Often the teacher's judgment is valid as a criterion of competence.

Fairness requires that every child be educated in accordance with his ability which, incidentally, is difficult to measure accurately and with confidence over a period of time.

The extremely wide range of fringe groups of youngsters poses a very difficult management problem if every child is to be similarly guided through the normal school experiences.

The complete model is extensive and detailed. It is therefore presented only in brief outline form in the following paragraphs.

Establish a System of Objectives

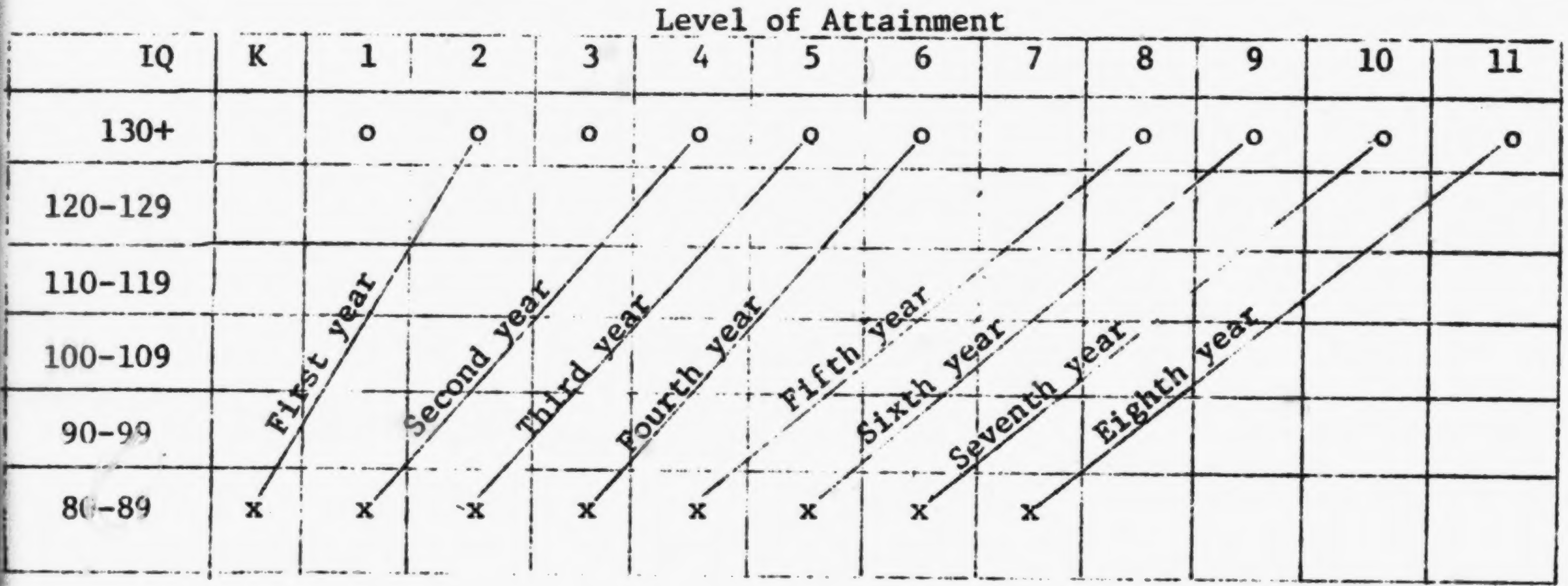
The first step in the development of a control model is to set up a system of objectives established by the governing body. A complete model would have a set of detailed objectives for every broad objective of the school. This point needs repeated emphasis: a unified model must cover all objectives. If all objectives are not incorporated into the control scheme, a failure is almost certain to result in distortion of the school program. The apparent exceptions to this rule are those situations where the top administrator has a strong, even though unspecified, sense of balance and superimposes his informal control and judgment on the formal plan.

Establish Levels of Individual Achievement Based on Absolute Scale Standards

The empirical relationship between the number of years of educational experience and the level of attainment for different kinds of youngsters is shown in Figure 1. In this figure, pupils are classified by I.Q.*, SES** or some other measure, to show the nature of pupil distribution and progress. Appendix A presents a sample of the striking differences in achievement that can be expected on the basis of I.Q. and SES.

FIGURE 1

RELATION BETWEEN LEVEL OF
EDUCATIONAL ATTAINMENT AND IQ (SES)*


Level of Attainment
IQ
K
1
2
3
4
5
6
7
8
9
10
11
130+
120-129
110-119
100-109
90-99
80-89
o
x
First year
Second year
Third year
Fourth year
Fifth year
Sixth year
Seventh year
Eighth year

*This chart is adopted from one used in the Cupertino School System.

* I.Q. - Intelligence quotient
**SES - Socio-economic status

In specifying individual achievement based on absolute scale standards, care should be taken to see that:

(a) The standards are expressed as go/no-go gauges

(b) Each level is defined as students having passed all designated gauges

(c) Units of learning are to be formulated for each type of child.

Patterns of Individual Pupil Development are Described by Levels

Any level under consideration has been achieved when the child can pass all gauges preceding the specified level. Achievement is not registered by doing a percentage of the tasks, it requires completion of all of them. Only critical prerequisites will be included in the gauges. The idea of the students being credited with a level of mastery if only part of the prerequisites are met is contrary to the theory of this model. However, a go/no-go gauge may consist of a number of trials, and some failures may be allowed if the ability to do the job is established by the other trials.

Each test must be designed to fully establish the competency of the child. A teacher observation that the child has demonstrated the ability in class would be an acceptable go/no-go gauge if a more objective test is too difficult to design or incorporate into the school program. In any case, teacher judgment is a valuable part of the testing plan. Note that this teacher judgment is not a rating as to relative performance of the child but is a specific judgment that he can or cannot do a carefully described task.

Under equal treatment, a slow child cannot be expected to move with the average, but he can be expected to master detailed objectives. This shifts the emphasis on the slow pupils from trying to speed them up and bring them to the same grade as brighter children to a program of insuring thorough mastery so that they have effective working tools even if it does take longer.

Fairness, therefore, requires that every child should be educated in accordance with his ability. But the school seldom knows exactly what the child's ability is. Some children are obviously bright and these can be given their opportunity, but the difficulty is in identifying and motivating the apparently dull who actually have a high potential. If an apparently dull child moves along with the standards set for an 80 I.Q., the school operation confirms the accuracy of his placement. If, however, somewhere along the development line his rate accelerates, the school should then recognize that his ability has been underestimated and special efforts should be made to keep him moving at this higher rate. If his rate of advance slows down, the indication is that he is approaching the limit of his capacity, and if the slowdown is pronounced some kind of terminal or special education should be considered.

Similarly with the bright pupils, if they drop back toward the average rate they may not have high ultimate potentials. They may have had the power of rapid absorption of the early tasks, but their capacity for dealing in abstractions may be limited.

In summary, it can be pointed out that in identifying patterns of individual pupil development, the following considerations must be made:

(a) Identification of pupils by learning speed

(b) Recognition of individual changes in learning speed

(c) Recognition of slow learners with high ability

(d) Identifying varying factors of general ability.

Utilizing School System Measures

While the grid in Figure 1 may be used in guiding an individual and in indicating to the school what its responsibility is to him, the same grid is also designed to measure a school or school system. For example, a school or school system will have a substantial number of pupils at most I.Q. (or SES) levels. With sizeable samples, the school can compute the proportion of an I.Q. group at each level for whatever grades they are in. In general, about half the students should be above the expected level and half below. Exact expectations can be worked out from prior years experience in the same school or from a combination of schools. These expectations become standards.

If the individual school is above the standard by more than chance variation, the indication is favorable; if below, unfavorable. In many cases, even if the result is favorable, management will want to know what should be done to get an even better result. The logical operation is to set up corresponding expectancies for each go/no-go gauge and identify the gauges that are the critical limiting factors in the attained level. Efforts can be concentrated on these to make the favorable results even better.

In using the grid in Figure 1 for evaluating various schools or school systems, the following elements should be given consideration:

(a) Actual versus expected school levels expressed as per cents of pupils by years in school

(b) Per cent passing individual gauges (to identify areas of retardation)

(c) Analysis by school

(d) Analysis by teacher

(e) Analysis by individual pupil's pattern of school development.

Constant Focus Must be Maintained on the Individual Pupil

The school's responsibility is to educate every child in accordance with his estimated potential. It should be recognized that the following principles apply:

(a) School measures are the proportion of individuals passing go/no-go gauges

(b) All school measures can easily be broken down into individual measures

(c) By working with an individual, and helping him, the school manager improves the school's measure.

> "We must provide an educational environment wherein the teacher stimulates, diagnoses, prescribes, organizes materials, and permits the students to inquire, discuss, communicate ideas, draw conclusions — an environment that stirs the learner to think, to learn, to apply knowledge, to make decisions wisely."
>
> Education Now For Tommorrow's World. Report of the CASSA Administrators' Curriculum Committee, May 1968.

USING THE MODEL AS A MASTER PLAN STRATEGY

The management control model and its foundational elements, as described previously, hold considerable promise for long-range planning. Indeed, it may be regarded in and of itself as a kind of master plan strategy or a blueprint for the development of education within a given school district. By itself, it defines the key roles of personnel within the district and provides the specifications and guidelines for the management structure and evaluative mechanism to be employed.

While it is true that the management control model can serve solely as a master plan strategy, it must be pointed out that as a strategy it does not specify the shape of education in the future. Indeed, its major strength is that it can accommodate any configuration that education in the district may take. Moveover, it can serve well — or perhaps best — if a systematic diversity of programs is encouraged. Such diversity can be by sector within the district or even by individual school. Thus, as a master plan strategy it fosters creativity and experimentation.

The management control model is able to stimulate diversity — or unity — since its primary focus is on the goals and objectives established. As emphasized previously, the beginning point of the control model is a careful blueprint or statement of objectives. These objectives govern decision making at every level of school operation from the day-to-day work of pupils, teachers, and school administrators to central office administrators. Thus, the management control model serves as a kind of management accounting system that monitors the progress of each pupil towards his assumed and periodically measured and adjusted potential. Moreover, it has been deliberately fashioned to be independent of any pattern of school organization or any curriculum, grade, or subject structure, or any grouping of pupils, in order that it can usefully assess the product of innovations and of standard school operations.

The management control model establishes the relationship between the pupil's characteristics and implied potential and the expected effect of the school on the pupil. In other words, it relates potential to school output. Implicit in this concept for long-range planning is the idea that the school has a responsibility to exploit the potential of youth in the community, and thus produce the maximum educational value in the members of the community.

Because different operating levels within a school system will use the management control model in different ways, some illustrations of its uses are next described. It is hoped that such illustrations will be helpful in providing a perspective on the significance of the model as a long-range master plan strategy for the development of education.

Using the Model at the Classroom Level.

Since instructional objectives are actually designed to show behavioral changes in individual pupils, they become the objectives toward which the student should strive. This means that the teacher serves a kind of "management by objectives" function in providing the kind of environment and educational experiences that will help the student attain the objectives. See Figure 2.

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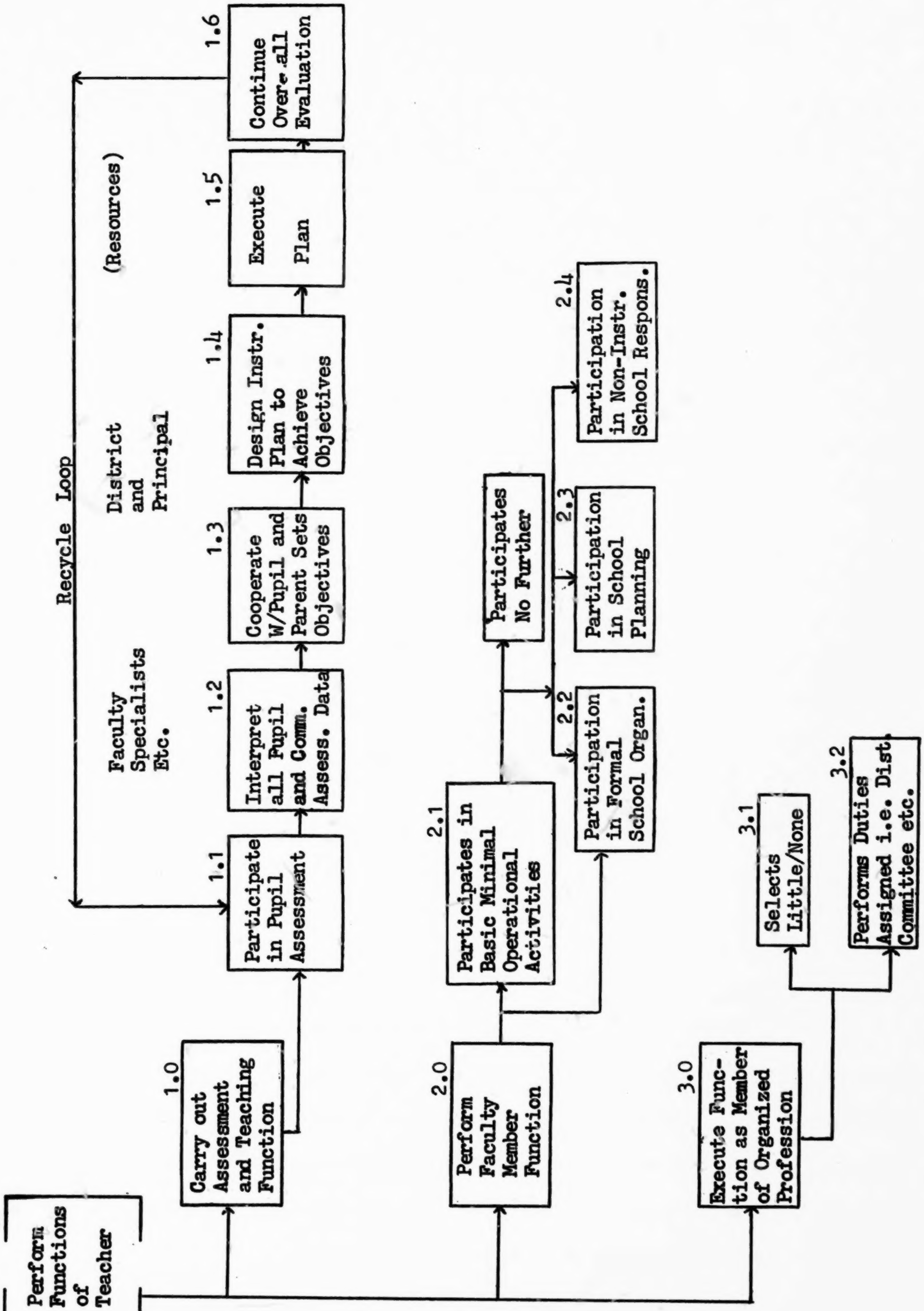
00
Perform Functions of Teacher
1.0
Carry out Assessment and Teaching Function
1.1
Participate in Pupil Assessment
1.2
Interpret all Pupil and Comm. Assess. Data
1.3
Cooperate W/Pupil and Parent Sets Objectives
1.4
Design Instr. Plan to Achieve Objectives
1.5
Execute Plan
1.6
Continue Over-all Evaluation
Recycle Loop
Faculty Specialists Etc.
District and Principal
(Resources)
2.0
Perform Faculty Member Function
2.1
Participates in Basic Minimal Operational Activities
Participates No Further
2.2
Participation in Formal School Organ.
2.3
Participation in School Planning
2.4
Participation in Non-Instr. School Respons.
3.0
Execute Function as Member of Organized Profession
3.1
Selects Little/None
3.2
Performs Duties Assigned i.e. Dist. Committee etc.

Figure 2. THE ROLE OF THE TEACHER IN FRESNO CITY UNIFIED SCHOOL DISTRICT.

To the extent that the objectives are stated clearly, the pupil and his parents can see exactly what is expected of him. He should, as his maturity allows, have a voice in deciding which experiences would be most suitable to him in the attainment of the objectives. Such a procedure not only gives him a commitment to the pursuit of the defined objectives, but as he passes each gauge he will logically have a sense of achievement and fullfillment, irrespective of ability level.

It must be acknowledged that no one knows exactly what the potential of the student may be. However, each person tends to have a pattern of response to academic work. The I.Q. test as it is modified to incorporate socio-economic status, will perhaps be one of the most valuable indicators of this type of response (see Appendix A). Any person with a barrier to performing academic work, whether it be a specific neurological or physical disability, or environmental deprivation, tends to rise in I.Q. as the barrier is eliminated or reduced. Therefore, one can anticipate, on the basis of factual school records, a substantial increase in I.Q. and a change in the pattern of response to academic work for these affected children.

The teacher also serves in a management function and exercises the principle of "management by exception". In short, he will be reasonably content as each student progresses satisfactorily toward his estimated potential. When there is a change in the rate of progress or level of attainment, however, it calls for his prompt attention. One of the very important functions of individual pupil measurement is the quick recognition of any error in the pupil's indicated aptitude for academic work. Errors are indicated in the model by the pupil's going faster or slower than expected in the developmental sequence. If the pupil moves faster than expected, the indication is that his potential has been underestimated. If he goes slower, the indication is that he is reaching a maximum level for his ability.

As long as the pupil gains steadily at his established rate, one cannot put an upper limit on his potential. A persistent but slow learner may ultimately be able to handle difficult and complex matters, and hence may reach the graduate level in college. On the other hand, a rapid learner at the elementary school level may hit a ceiling effect, owing to some limiting factor, and be barely able to finish what we now think of as high school work. The management control model lends itself to the maintenance of suitable treatment for these kinds of situations.

Use at the Building Level: The Function of the Principal

These measurement concepts and experiences can be given direct and practical application in defining the function of the school principal. His prime responsibility — and accountability — is for the optimum development and attainment of each child within his jurisdiction. Moreover, his functioning relies heavily on the twin concepts of (a) management by objectives, and (b) management by exception in the operation and control of the school.

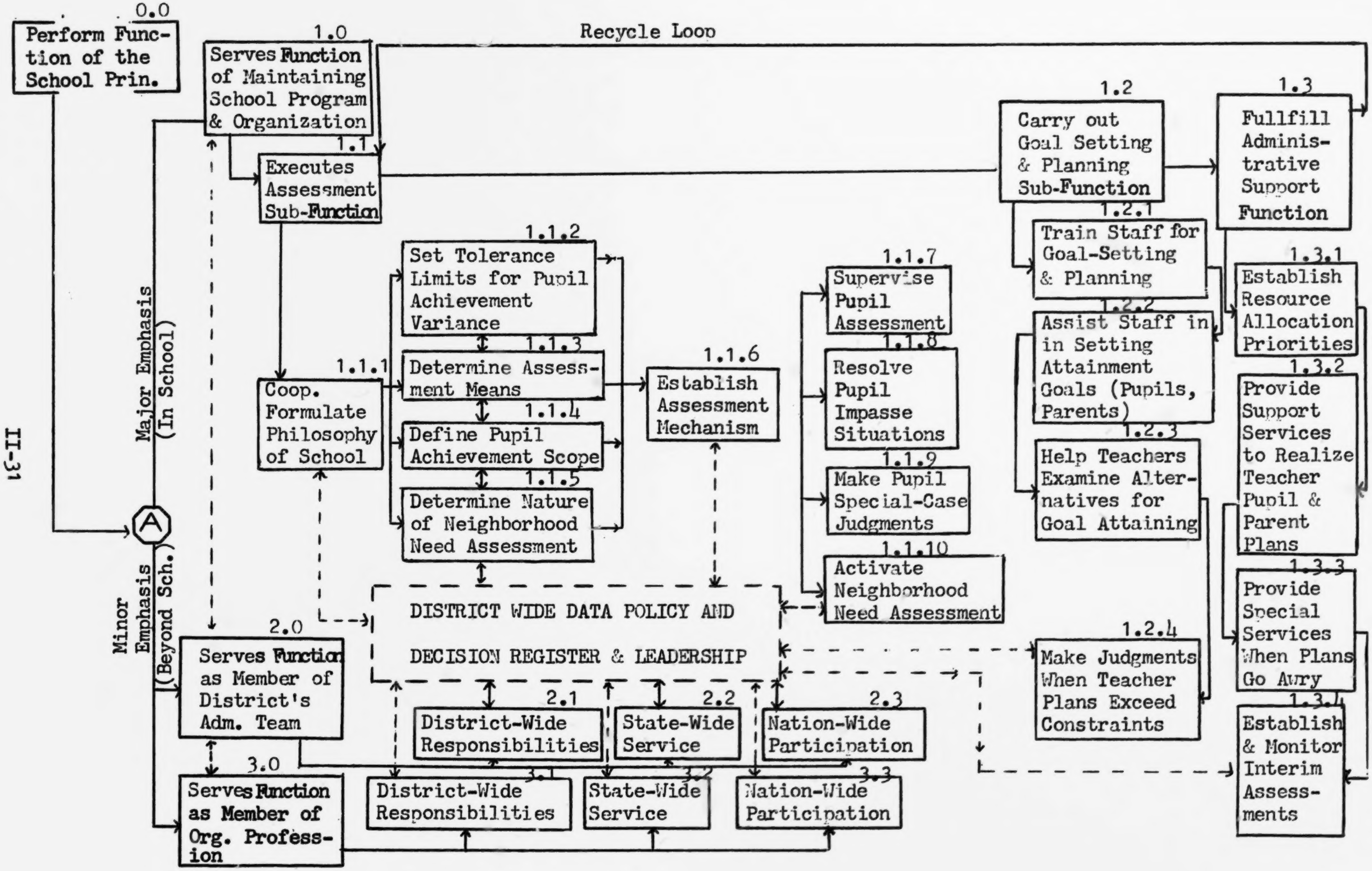
0.0
Perform Function of the School Prin.
Recycle Loop
1.0
Serves Function of Maintaining School Program & Organization
1.1
Executes Assessment Sub-Function
1.1.1
Coop. Formulate Philosophy of School
1.1.2
Set Tolerance Limits for Pupil Achievement Variance
1.1.3
Determine Assessment Means
1.1.4
Define Pupil Achievement Scope
1.1.5
Determine Nature of Neighborhood Need Assessment
1.1.6
Establish Assessment Mechanism
1.1.7
Supervise Pupil Assessment
1.1.8
Resolve Pupil Impasse Situations
1.1.9
Make Pupil Special-Case Judgments
1.1.10
Activate Neighborhood Need Assessment
1.2
Carry out Goal Setting & Planning Sub-Function
1.2.1
Train Staff for Goal-Setting & Planning
1.2.2
Assist Staff in in Setting Attainment Goals (Pupils, Parents)
1.2.3
Help Teachers Examine Alternatives for Goal Attaining
1.2.4
Make Judgments When Teacher Plans Exceed Constraints
1.3
Fullfill Administrative Support Function
1.3.1
Establish Resource Allocation Priorities
1.3.2
Provide Support Services to Realize Teacher Pupil & Parent Plans
1.3.3
Provide Special Services When Plans Go Awry
1.3.4
Establish & Monitor Interim Assessments
Major Emphasis (In School)
Minor Emphasis (Beyond Sch.)
A
DISTRICT WIDE DATA POLICY AND
DECISION REGISTER & LEADERSHIP
2.0
Serves Function as Member of District's Adm. Team
2.1
District-Wide Responsibilities
2.2
State-Wide Service
2.3
Nation-Wide Participation
3.0
Serves Function as Member of Org. Profession
3.1
District-Wide Responsibilities
3.2
State-Wide Service
3.3
Nation-Wide Participation

Figure 3. Flowchart Depicting the Role of the School Principal.

The function of the principal is described in model form in Figure 3. From the figure it may be seen that he actually serves three major functions:

(a) Maintains the school program and organization

(b) Serves as a member of the district's administrative team, and

(c) Serves as a member of the organized profession.

Notice from the figure how each of the details of these functions maintains an inner communication with one another and all activities are interrelated through leadership and a district-wide data, policy, and decision register. It should also be noted in Firgure 3 that the second and third functions enumberated have very minor significance while the first function is of major importance. Notice too that the first function, maintaining school program and organization, is comprised of three sub-functions. The first of these is an assessment sub-function. The second is a goal-setting and planning sub-function and the third is an administrative support sub-function. The detailed elements comprising each of these sub-functions are also shown in Figure 3. For a detailed description of each of the boxes shown in the figure, see Appendix B where a brief descriptive paragraph explains each numbered box.

The management of each school involves the development of a school philosophy and the establishment of attainable goals with teachers as well as with parents and pupils. It also entails the reporting to and receipt of direction from higher administrative levels on difficulties and successes, (see Figure 3). In executing his function, the principal sets tolerance limits, monitors the operation of the program, and localizes any departure from expectation by seeing which expectancy group of pupils is primarily affected. He may also carry out his trouble shooting function by making sub-analyses by classroom to see where the peculiar response occurred. The management control model, as applied at the principalship level, lends itself to easy localization of failures and successes. Where localization is precise enough, reasons can frequently be found for pupils deviating from expected progress.

In terms of its master plan possiblities, it should be further noted that the management control model does not limit the function of the building principal to traditional assignment of one principal to one school. Rather, in its encouragement of diversity and creative experimentation, it opens up new realsm of possibilities for redeploying principals within a given district where their professional experience and unique expertise can be brought to bear on the most serious problems of the district. This adds a new dimension of flexibility in the utilization of professional personnel in the solution of district problems.

Use at the District Level: The Function of the Central Administrator

The management control model described in the preceding chapter lends itself to a completely new definition of the function of the central school administrator. Describing the function of an assistant superintendent seems to be most advantageous. The model allows for this or any other position, and lends itself to different kinds of role definition. However, the model seems to be particulary well-suited for the assistant superintendent to be given a geographical or academic sector of the district. Here, too, it encourages a maximum diversity among different sectors of the district, thus enhancing the maximum relevance of educational programs to fit the unique needs and aspirations of the various sectors of the district.

Figure 4 describes the functions of the assistant superintendent in the form of a flow chart or graphic model. From Figure 4 it may be seen that the assistant superintendent's position is comprised of at least three major functions: (a) an assessment, planning, and support function; (2) an operational function; and (c) a function as a member of the district administrative team. It should be noted in Figure 4, as in Figure 3, that the various functions are interrelated as shown by dotted lines, and all elements feed into a district-wide data, policy, planning and decision register and leadership repository.

It should be noted that the assistant superintendent can consolidate within his assigned sector the kinds of information that were reported by the various area school groups. These in turn can be compiled into summary statements for the sector. Moreover, comparisons can be made from school to school in order to locate exceptions to the characteristic responses. Where a single school forges ahead of other schools in the sector, it should be used as a model or paragon for other schools to emulate or surpass.

The compiled data from the various schools within a sector can also be used for the localization of problems and hence the most advantageous allocation of supervisory time to those elements or localities where concentrated administrative attention gives promise of making the biggest differences. The management control model also opens up possibilities of the allocation of budget funds so that they can be related to specific objectives as stated inthe framework of the model. It thus becomes a forerunner to and an expediter of a planning programming budgeting system (PPBS).

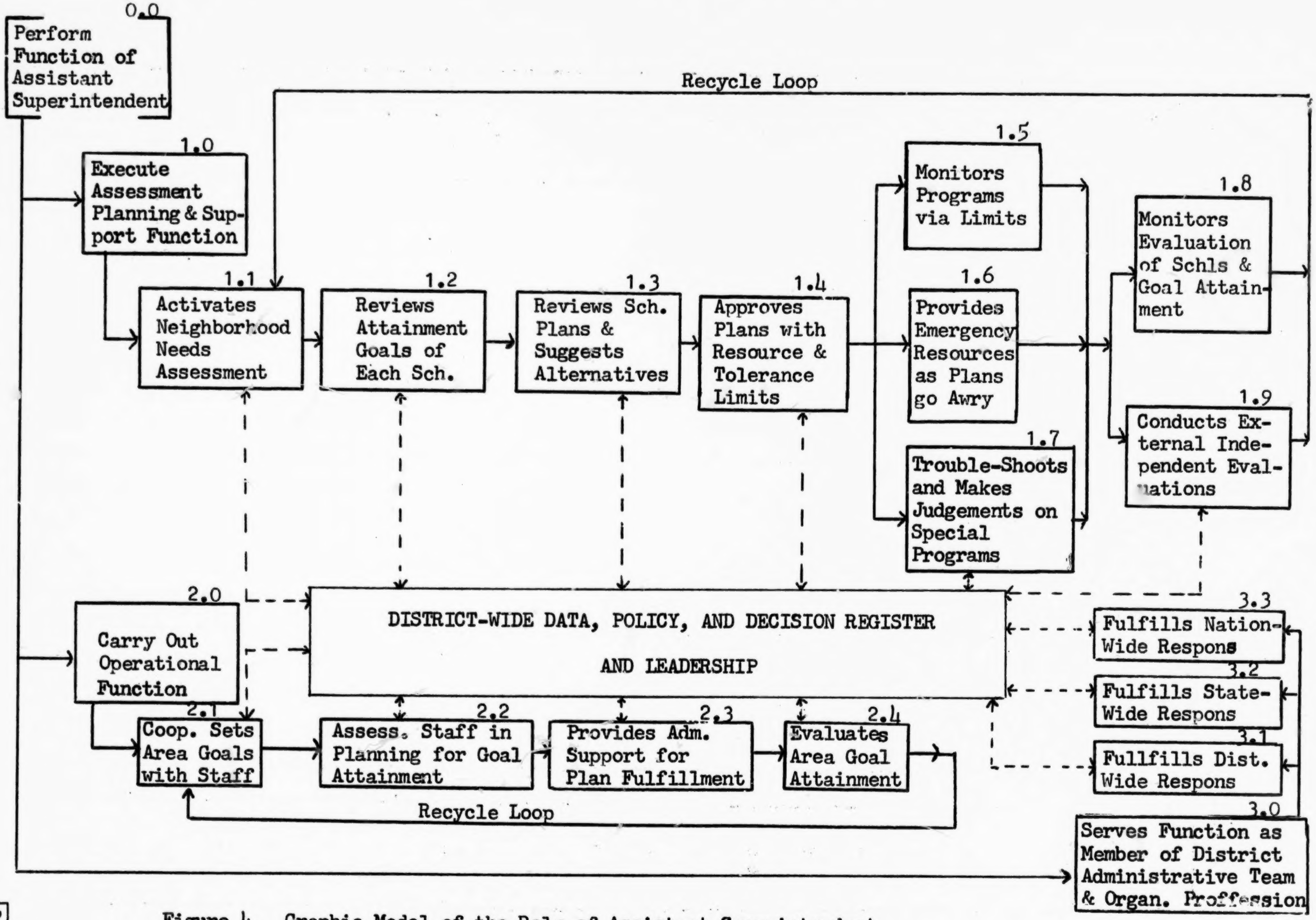
0.0
Perform Function of Assistant Superintendent
Recycle Loop
1.0
Execute Assessment Planning & Support Function
1.1
Activates Neighborhood Needs Assessment
1.2
Reviews Attainment Goals of Each Sch.
1.3
Reviews Sch. Plans & Suggests Alternatives
1.4
Approves Plans with Resource & Tolerance Limits
1.5
Monitors Programs via Limits
1.6
Provides Emergency Resources as Plans go Awry
1.7
Trouble-Shoots and Makes Judgements on Special Programs
1.8
Monitors Evaluation of Schls & Goal Attainment
1.9
Conducts External Independent Evaluations
2.0
Carry Out Operational Function
DISTRICT-WIDE DATA, POLICY, AND DECISION REGISTER AND LEADERSHIP
2.1
Coop. Sets Area Goals with Staff
2.2
Assess. Staff in Planning for Goal Attainment
2.3
Provides Adm. Support for Plan Fulfillment
2.4
Evaluates Area Goal Attainment
Recycle Loop
3.3
Fulfills Nation-Wide Respons
3.2
Fulfills State-Wide Respons
3.1
Fullfills Dist. Wide Respons
3.0
Serves Function as Member of District Administrative Team & Organ. Proffession

Figure 4. Graphic Model of the Role of Assistant Superintendent

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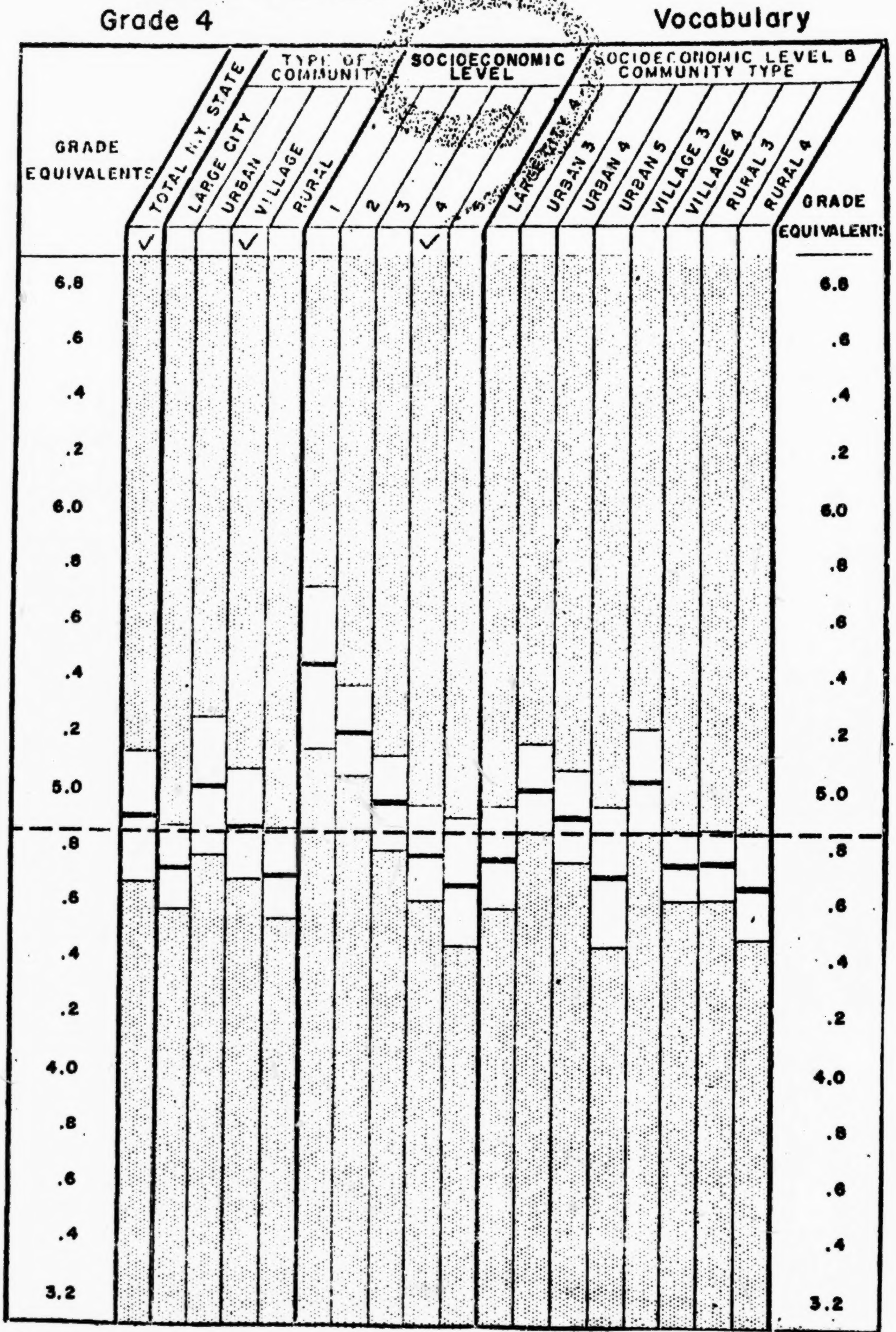
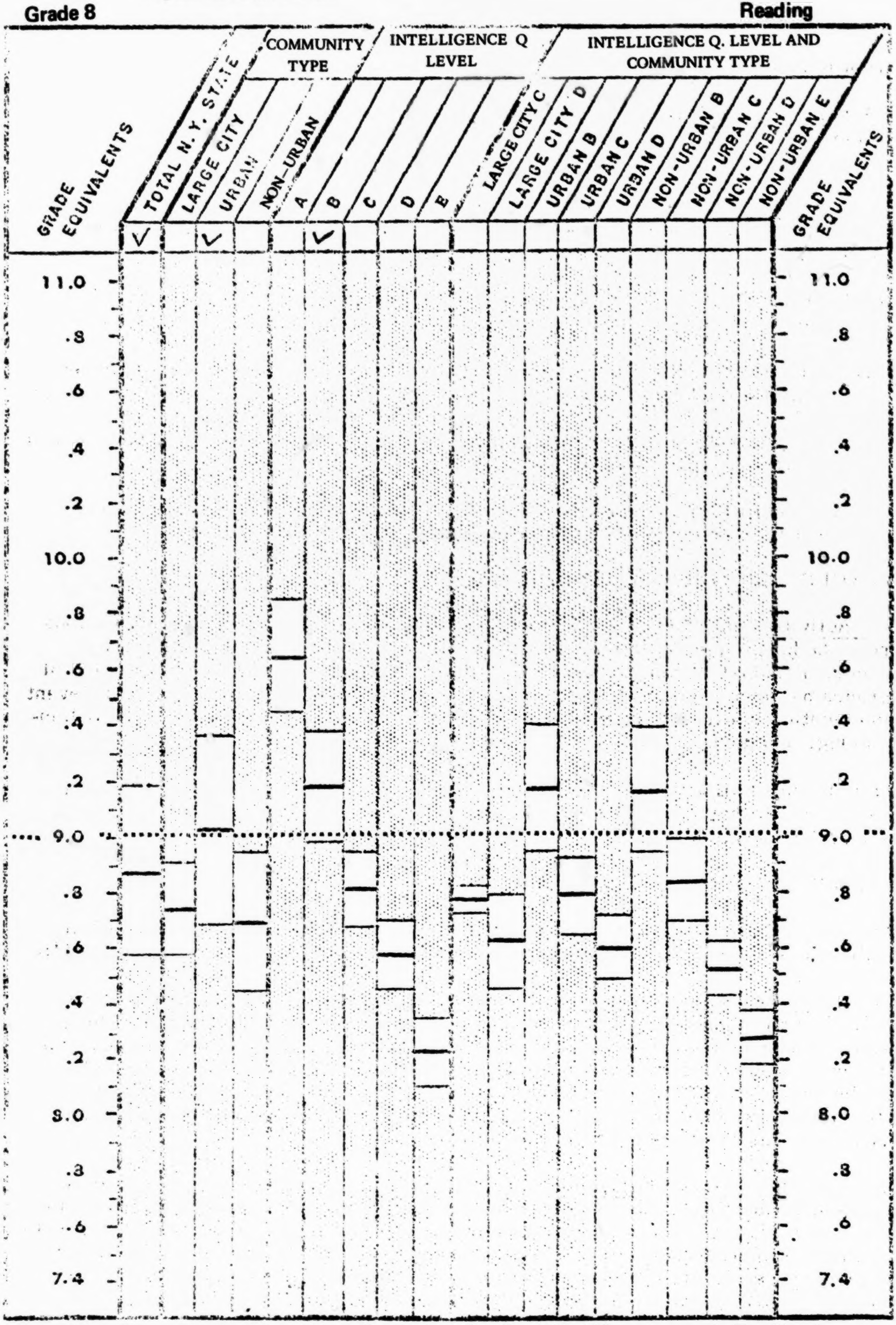
APPENDIX A

Illustration of Use of Socio-economic Level in the Interpretation of Pupil Achievement



From New York State Education Department Quality Measurement Handbook

Illustration of Use of Intelligence Quotient in Interpreting Pupil Achievement



From New York State Education Department, Quality Measurement Handbook

APPENDIX B

I. PERFORMANCE ROLE OF THE SCHOOL PRINCIPAL *

A. In-School Responsibilities (major emphasis)

Basic Assumption: A successful principal manages a school where every youngster develops satisfactorily in accordance with the best periodic estimates of his potential.

Underlying Rationale: The principal's role is embedded in the teaching-learning cycle for youngsters. Such a cycle would show the following steps in the configuration of a wheel:

ASSESSMENT STEP. Assess the potential of each youngster and determine his present status on a mosaic of measures of development and attainment.

GOAL DEFINITION AND EDUCATIONAL PLANNING STEP. Define the attainment goals for each pupil on a short-term (to next assessment -- usually one year or less) and on a long term (to horizon year or adult status) basis, and detail educational plans of the specific educational experiences to be provided in order to meet these attainment goals.

EDUCATIONAL PROCESS STEP. Provide the specified educational experiences; that is, implement the educational plans.

RECYCLE THROUGH ASSESSMENT STEP, ETC.

Liaison Activities and Feedback Information. As the principal functions in his various roles he keeps in contact with district-wide policies and leadership in order to assure a consistency of purpose, a coordination of efforts, and the articulation of programs. (See register depicted in Figure 1). He also stays aware of all relevant information in order to maintain perspective in his approach to planning, problem-solving, and decision making.

The following outline defines the various roles of the principal. These steps may be seen in flowchart form in Figure 2, and the prefix numbers will help identify the function on the flowchart.

1.0 EXECUTIVE ASSESSMENT ROLE

This role is defined in accordance with the assessment step cited in the underlying rationale. It is dynamically comprised of a number of functions that are now described.

1.1 Cooperatively Formulate the Philosophy of the School. The principal exerts his leadership in helping the teachers and patrons of the school formulate a philosophy of education. This identifies all of the various beliefs, values, and assumptions upon which the school and its program operate. The philosophy of the school may be unique in form and expression, but should be consistent on major issues with the district-wide philosophy of education and should be adapted to the unique characteristics of the neighborhood it serves.

1.2 Set Tolerance Limits for Pupil Achievement Variation. From the total array of measures and judgments to be obtained on pupils in order to assess their development and attainment, the principal must determine how much variability is allowable and which is merely due to chance factors operating. Thus, as a school manager, the principal must attempt to identify all of the important forces operating in the school's area of responsibility and he must seek to control the critical elements if the defined pupil outcomes or attainment goals are to be achieved.

* Courtesy, Fremont Unified School District, Fremont, California.

In short, he must establish through a statistical process just how much variation in pupil progress or performance is to be allowed before some kind of signal is to be made that will bring specialized attention. Such attention is to be promptly brought to bear on any significant deviation in status or progress that exceeds any chance limits (usually assumed to be any performance that exceeds three standard deviations from expected performance).[1]

1.3 Determine Means of Assessment. The principal has the responsibility of determining just how pupils are to be assessed, or their progress measured. He must decide -- within the framework of district policy -- the tests that are to be administered, the specific kinds of teacher, nurse, or other specialist judgment that must be obtained, and the timing, locus, and report form that will be used.

1.4 Define the Scope of the Assessment or Achievement Measures. Within the framework of district-wide policy, the principal must specify the range and array of measures to be used in assessing pupil potential, status, or progress. Typically, the specified measures include (a) achievement tests; (b) I.Q. tests: (c) measures of socio-economic status (SES); (d) diagnostic tests: (e) physical examinations: (f) information on parents, siblings, home conditions, and (g) teacher judgments. The identification and selection of appropriate measuring device is the essence of this step.

1.5 Establish Assessment Mechanism. After determining tolerance limits and the means and scope of assessment, the principal must set up and make operational the machinery for carrying out the total assessment procedure. This is essentially an administrative responsibility that allows for the various assessments to be properly made as per schedule and the results properly channeled so that the appropriate teachers, nurse, social worker, psychologist or other specialist receives the information he needs to carry out his assigned function.

1.6 Supervises the Total Assessment Procedure. Once the machinery for pupil assessment has been set up and made operational, it then becomes the principal's responsibility to carry a supervisory role in monitoring the total operation and keeping it functioning properly.

1.7 Resolve Impasse Situations. In the course of its normal operation, the entire pupil assessment activity will periodically encounter impasse or problem situations. Such situations are caused for example, when a parent refuses to cooperate, or there is a conflict in teacher or specialist judgment, or limitations in time, information, personnel or other resources hold up the routine functioning of the assessment procedure. It then becomes the responsibility of the principal to render a prompt decision or take whatever appropriate action is necessary to resolve the impasse or otherwise restore activity or repair the malfunctioning of the assessment machinery.

1.8 Make Special Case Judgments. In establishing tolerance limits and activating the assessment mechanisms, the principal automatically defined the special cases that needed unusual attention or treatment. This is the essence of the concept of management by exception and it is these identified exceptions that require the principal's trouble-shooting skills, problem solving techniques, and sound judgments and decision making. He has the responsibility for bringing available resources to bear in such a way as to move these exceptional cases back into the normal pattern of expectations or else revise standards accordingly.

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[1] For a more detailed discussion of the procedure to be followed in setting tolerance limits see Jefferson N. Eastmond and Charles M. Armstrong, Emerging Design of Assessment in Education (Burlingame: Operation PEP, 1968). Chapter 2.

2.0 CARRY OUT GOAL-SETTING AND PLANNING ROLE

As the principal fulfills this role he has the opportunity of exerting his most creative leadership into the instructional program. He does this while still respecting the professional competence and integrity of teachers and providing appropriate decision opportunities for pupils and parents. The various elements or functions that comprise this role are now briefly discussed. (See the second portion of the underlying rationale presented earlier in this section).

2.1 Train Staff for Goal-Setting and Planning. The principal leads his teachers in learning comprehensive, cooperative and pupil centered processes for goal setting and planning. The development of attitudes, knowledge and skills in goal setting and planning is carried out by the principal directly or through his involvement of school or district staff or others who may have special abilities in this critical work. Attention is directed to practices of setting relevant goals that take into account the values to be derived from subject matter, the experience and ability of the learner and the relationship between these and the world at large. The ability of teachers to set realistic goals in terms of pupil assessments is the objective desired.

2.2 Assist Staff in Setting Attainment Goals. The principal works closely with teachers, individually or in groups to ascertain their needs and support their efforts in goal setting. The present status and estimated potential of each student becomes the basis for projecting the qualitative and quantitative goals selected. The principal encourages teachers to utilize their expertise, in child development and in cognitive attitudinal and psychomotor learning, to set appropriate time and achievement expectations for each child. The principal assists teachers in relating the district and school philosophy to the setting of goals. He provides information or other support necessary to this function.

2.3 Help Teachers Examine Alternatives for Goal Attainment. Since nearly all goals may be reached through a variety of processes it is incumbent on the principal to keep teachers aware of the many possible alternatives from which they may choose the means to attain their selected goals. Care must be exerted that convenient means do not determine goals but that child needs determine goals and means are selected which are the most appropriate to achieve those goals. Great flexibility exists for the principal and teachers to vary the employment of the elements of the teaching-learning process, ie., the learner, the teacher, the learning environment, the subject matter, time, and learning materials. Together principals and teachers can examine the myriad methods by which these elements may be combined and determine that combination most promising to the attainment of the goals established.

2.4 Make Judgments Whenever Teacher Plans Exceed Constraints. The principal leads his staff in staying within the resources allocated to the school. When plans exceed the limits of resources he involves teachers in the review of alternatives and selection of processes which fall within resource limitations. When required to decide allocations among programs he allots resources according to established priorities and in light of school and district philosophy.

3.0 FULFILL ADMINISTRATIVE SUPPORT ROLE

As an instructional leader of primary consequence to the learning outcomes achieved in the school and district, the principal affects a wide range of activities directly and indirectly through his support role. His skill in supporting teachers and program elements can be the determining factor in their success or failure.

3.1 Establish Resource Allocation Priorities. Working with his staff toward attainment of pupil goals selected, the principal acquires for the school, and allocates, the resources of staff, materials, facilities and time necessary to the achievement of those goals. Priorities for allocation are established according to needs revealed by the assessment process so that resources, in the form required to achieve the goals, are available for teacher and learner use. Priorities are manifestations of the system of ideas embodied in the school and district philosophies.

3.2 Provide Support Services to Realize Teacher, Pupil, and Parent Plans. Once programs have been planned to fulfill the goals worked out by parents, teachers and pupils the principal is responsible to assure the services which make available the support necessary to initiate and sustain those programs. To this end he works with school and district components responsible to supply the required services. Planning and providing for future support needs are equally a part of this role.

3.3 Provide Special Services Whenever Plans Go Awry. In the event that plans miscarry or must be altered due to changes in circumstances it is the principal who takes the lead in adjusting support allocations to correct deviations from the plan or to restart the processes. When goals are not attained or when assessment shows expectations are not met the principal has an exceptional situation calling for his management talents. The priorities established may require reordering or the allocation of resources may be inappropriate to the goals set. When necessary, the principal calls for additional resources needed to achieve the goals established.

3.4 Establish and Monitor Interim Assessments. The principal, as planning and implementing leader, establishes and maintains a system of periodic assessments of pupil progress. This function serves both as a monitor on the effectiveness of the programs and processes evolved to effect goals and as a measure of the principal's own effectiveness. By monitoring progress regularly stengths and weaknesses in the process may be discerned promptly and appropriate steps taken. Involvement of appropriate resource personnel to assist with the assessment process is the responsibility of the principal.

B. Beyond-School-Building Responsibilities

Secondary Assumption: As a leader in a profession which is critical in determining the quality of life that can be achieved in a community, state and nation, a principal's responsibilities extend beyond the walls of his school into the wider community with which it is in continuous interaction. A successful principal makes substantial leadership contributions to this interaction and to the intra-district cooperation which increases the effectiveness and impact of each of the component parts of the district. He has a further responsibility to stimulate his own continued growth within his profession.

4.0 SERVE ROLE AS A MEMBER OF THE DISTRICT'S ADMINISTRATIVE TEAM

Every organization must both maintain its current operations and provide for its own future. School districts are no exception to this rule. The administrative team, of which the principal is a part, is one way in which the district enhances its present effectiveness and works toward its own successful future. The specific roles in which a principal may serve in fulfilling his "beyond-the-school" responsibilities vary widely in nature and from time-to-time. They provide great opportunities for administrator growth and enhance the principals' effectiveness in their schools. By participation in the administrative team the principal makes not only an investment in his own professional growth, and in the district's future, but also contributes to

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successful learning experiences for every learner, child or adult, in the district. The total community is the beneficiary of his cooperative work efforts.

DISTRICT-WIDE RESPONSIBILITIES.

District-wide responsibilities of principals include leadership and participation in community-school interaction, working membership in attendance area, district or district-community groups, professional organization activities, special assignments, and cooperative interaction with fellow administrators. An essential role is active encouragement and involvement in the development of future principals. As a member of the administrative team and an official of the district the principal works positively and actively to support district policies and procedures. He may at the same time work toward developing improved policies and procedures for district functions.

STATEWIDE RESPONSIBILITIES

The successful principal carries his awareness and impact beyond the limits of his immediate district into the affairs of his region and state in both his professional and community involvements.

NATIONWIDE RESPONSIBILITIES

The products of the educational process may live their lives in the district where they attend school, probably will maintain their state residence, but with certainty will be citizens of their nation throughout their entire lives. This fact imposes on the principal, as chief planning leader in his school and as an important contributor to the work of his district, the responsibility to be cognizant of the important events, forces and trends of his times. He may read extensively both in and beyond his professional field: ideally he will participate in some nationwide activity or study and travel sufficiently often to maintain touch with changes of national scope. He incorporates these experiences into his work within the school and district.

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III. THE DISTRICT'S PHILOSOPHY, GOALS AND POLICIES

Philosophy and Values 1

Goals and Objectives. 16

Policy and Regulations. 27

> "Strategic planning is the process of deciding on objectives of the organization, on changes in these objectives, on the resources used to attain these objectives, and on the policies that are to govern the acquisition, use, and disposition of these resources."
>
> -- Robert N. Anthony
> Planning and Control Systems
> A Framework for Analysis

PHILOSOPHY AND VALUES

The Public School and Purpose

A major portion of all debate concerning education throughout the world, and the essence of educational philosophy itself, revolves around the question of purpose. "To what end shall education be directed" has been one focus of educational thought since the beginning of recorded history. The death of Socrates concerned the issue; the debate between the Council for Basic Education and the Progressive Education movement has provided fuel for the fire since the 1920's. The "sputnik revolution" of the 1950's and the current "taxpayer"s revolt" which is directed in part toward the educational establishment have all been milestones in the continuing search for a clearly defined purpose.

No one seriously denies the necessity of education, and few in this country thus far dispute the concept that public education is the most likely means for eventual solution of problems created by the growing complexity of modern day living. Precisely what this function shall be, however, is by no means agreed upon. A common complaint among educators, for instance, concerns the tendency for all unresolved problems of society to become responsibilities of the schools. Drug abuse, de facto segregation, and sex education are three current cases in point. If the schools cannot do what society in general has not done in resolution of these problems, the schools tend to be saddled with the blame for another "failure".

There are those, however, who proclaim vehemently that the purpose of the school is purely and simply to provide each child with the basic 3R's — reading, 'riting and 'rithmetic — no more. Such citizens are critical of programs which claim to develop the whold child. Protests against rising school costs may be related to the scope of educational goals.

The political, legal, and societal structure of our nation encourages diversity of opinion; the rights of the minority are held in high esteem. It is not surprising, then, that wide divergence of opinion exists concerning the questions cited above, nor is it unhealthy; but it does make the plight of the schools a difficult one. The public schools are responsible to public opinion and demand; public opinion and demand is diverse and ofter unpredictable in our pluralistic society.

It is generally accepted that one major function of the school is to perpetuate the culture. If this is so, the setting in which the public schools operate, as described, places in focus such questions as these:

1. Since "school" is not synonymous with culture, what facets of the culture shall it perpetuate?
2. How shall schools serve a changing society — serve merely as possible reflectors, or help to mold minds to lead the change?
3. How should the school treat controversy in a pluralistic society?
4. What shall the role of the school be in an age when the validity of few remaining "absolutes" is being attacked?
5. What is the role of the school in teaching manners, morals and ethics in a pluralistic society?

6. Should the schools make or teach value judgments on contemporary issues?

A Syncretic System of Values

In recognition of the pluralistic value structure of our society it is unreasonable to suppose or even hope that a thorough, comprehensive set of value statements will be agreed upon by any major segment of the community. This, added to the fact that American society outwardly espouses absolute values but is operationally pragmatic or relative, once again emphasizes the difficulty of finding well-accepted common ground. The task is not hopeless, however. It may be most profitable to attempt to find and define what common ground there is.

A local Board of Education, by virtue of the process by which it is elected, may assume that it speaks for the community, and is in a position to make jugments of this nature. The elective campaign process forces some commitment from each candidate to operational values yet a major variation from those of the community will insure defeat. Members of the Board, are seldom of one mind in their philosophical beliefs, and compromise is necessary. The major reason for "local control" of schools is to reflect the community served.

A syncretic value system is, and must be, the result. It is possible to reconstruct the value base of a school district in terms of its stated philosophy, its operations policies, and its goals and objectives, as was partially done by Project Design in the process of assessing district needs. This reconstruction pinpoints mismatches of values (what should be), and operational policy (what is), forcing redefinition or reconsideration in areas of inconsistency. It may be considered by some to be sematic boondoggling, but the process, taken seriously, forces serious consideration and often redefinition of philosophy, values, policies, and objectives to the better understanding of all concerned, and the increased effectiveness of the district.

Philosophy and Values

In dealing with problems of public education it is traditional and useful for a Board of Education to adopt a philosophy of education that is a collective statement of values basic to operation of a school district. Considering the political nature of a school board and its intended responsiveness to public opinion, it is to be expected that the statement of philosophy will be general and non-controversial; policies and objectives (later discussed) can provide program specificity.

Decisions are constantly made by Boards of Education. Such decisions are made within the framework of the generalized philosophy to be sure, but are based upon a system of values, whether or not defined. With full recognition of the complex interrelationships involved in ascertaining these values, it is appropriate that a school district, through its Board and administration, make an attempt to do so in as much detail as possible.

As a problem is attacked, the related values as statements of "what should be" are thought through. Simply writing out and agreeing on such values might shorten the discussion by identifying constraints which otherwise are only implied. Values so stated and agreed upon will provide a basic storehouse of material which can serve to assist future decision making and point out inconsistencies. Such a "value bank" constitutes quite precisely a detailed philosophy of education.

The establishment of Project Design's Mission Objectives (publication #32) was based in part upon the organization of an embryonic value bank by representative district staff committees. Dr. Lester Ristow commented in his Evaluation Report Number Two of the External Evaluation of Phase I Activities and Phase II Plans of Project Design, "Probably the values stated by these committees are as nearly true representations of school-community values as any that could be produced by other means."

Some of these value statements are listed in the following section. They are classified by the Croft system used in the district to organize by-laws, policies and regulations. It should be noted that some value statements as guides for decision making may apply to several topics. This list is not a complete set of values and was not intended to be — such a "value bank" would never be complete. The values listed in the pages to follow were stated by district staff in the needs assessment; they may provide a basis for beginning.

Two summary observations may be made by comparing such specific statements of value beliefs with a brief generalized overview philosophy common to most districts and to Fresno. First, they offer greater guidance to those making decisions. It is probable that no use is made of the current adopted philosophy because project staff found that half of a group of administrators queried were not sure whether or not the district had a written statement of philosophy.

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The second observation is the potential for improved efficiency and consistency of decision making by maintaining an available "value bank". Different groups not only have to "invent the wheel" over and over when starting with blank paper, but they also are likely to accept some rather diverse values as they make decisions.

The ultimate of course, is a computer stored set of coded values continuously updated as added decisions are made, and available almost instantly in sets related to whatever topics were pertinent.

1.000 Community Relations

1.100 Communication with the public

A commonness of purpose should exist between the community and the public school system.

The school system should be responsive to the specific needs of the community.

People both within and external to the school district should feel fully informed about the programs, policies, and procedures of the schools.

All levels in the school district and community need to be made aware of guidance programs and services on a continuing basis.

Publicity should exist which accents positive aspects of program.

Schools should provide a program which enjoys strong community financial support.

The district should be aware of educational needs as perceived by minority groups and respond positively to those needs.

1.200 Participation by the public

Specific objectives for the district should be developed cooperatively at the appropriate level by all those school personnel, lay personnel, students, and community agencies that are involved.

The district should have an over-all statement of the role it plays in preparing students for effective citizenship which reflects the desires of the community and needs of the students.

The district should understand the role played by other public agencies and citizen groups in educational planning and consider these groups as an integral part of its own planning structure.

Objectives should be created through a process of staff and community involvement.

The schools should be used by the community for self-improvement and community decision making.

The members of the minority community should be realistically involved in determining the educational needs of minority students and should be fully aware that their involvement in this determination is essential for the effective planning and operation of any such program.

There should be involvement of staff and community in an advisory capacity in guidance planning.

There should be close, active correlation of objectives, purpose, and activity between business and industry and schools in areas of vocational education.

1.300 Public activities involving staff, students or school facilities

As the mechanics and community scope of the educational process change, physical facilities should not serve as a hindrance to the modifications.

1.400 Relations between other governmental agencies and schools

The school district and teacher training institutions should cooperate in developing training programs which qualify people to perform services the district expects from its employees.

School planning should be based on accurate, up-to-date demographic information accessible in a reasonably centralized location.

The skills and research information of college people should be utilized in solving educational problems and improving instruction.

The district should understand the role played by other public agencies and citizen groups in educational planning and consider these groups as an integral part of its own planning structure.

Specific objectives for the district should be developed cooperatively at the appropriate level by involving appropriate school personnel, lay personnel, students and community agencies.

1.500 Relations between area, state, regional, and national associations and schools.

The school system should utilize current available information from area, state, regional and national associations.

2.000 Administration

2.400 Administrative operations

Teachers and administrators should agree on their respective roles in the process of change.

4.000 Personnel

4.111 Recruitment and selection

Minority groups should feel that the district is doing "what it should" in hiring and placing minority group members.

4.112 Appointments

The ratio of inexperienced teachers to experienced teachers should be reasonably uniform throughout the district.

The district should fully utilize the training and talents of professional personnel.

4.115 Assignment and transfer

The district should assign and retain personnel in positions for which they are adequately trained.

Schools having a significant number of minority group students should be staffed with personnel sensitive to and prepared to effectively deal with the unique curricular and social needs of these students.

4.116 Responsibilities and duties

The district should provide adequate job descriptions so that every employee knows what he is to do and what should be done by others.

Each individual should be confident in knowledge of his job, its responsibility, limitations, authority and opportunity.

Teachers and administrators should agree on their respective roles in the process of change.

All district personnel should have a positive attitude toward the implementation of effective innovative programs.

Specific objectives for the district should be developed cooperatively at the appropriate level by all those school personnel, lay personnel, students, and community agencies that are involved.

A sufficient number of district personnel should have effective skills in developing objectives, planning program, and designing evaluative processes.

Curriculum objectives should be developed in part by personnel who will be involved in implementation.

The certificated staff should be aware of current thought and recent research related to its specific educational responsibility.

The staff of the district should be well informed concerning the objectives and curricular development in the district and be constantly aware of current trends in education.

A teacher's time should be spent in activities that can only be done effectively by a teacher.

Teachers and aides should work in harmony to produce the most effective educational program.

The staff and students of the total district should be aware of and sympathetic to the unique problems and needs of the minority student.

4.117 Probation and evaluation

The district should identify areas of inadequate performance.

The district should be aware of how well all of its employees are performing the duties assigned them.

There should be significant teacher involvement in evaluation.

4.120 Temporary and part-time personnel

The district should emphasize the importance of good rapport between employees and students.

4.130 Activities

The district should be responsible for training its employees so that they render effective service in the positions for which they are employed.

The district should be responsible for training or retraining district personnel who are not performing adequately.

4.140 Compensation and related benefits

Employees of the school district should receive compensation commensurate with their training, responsibility and performance.

5.000 Students

5.120 Progress

Students should be able to progress through curricular material at a rate and sequence that allows each student to achieve a maximum of success and limit his likelihood of failure.

The district testing program should provide objective-oriented information to assess student achievement realistically without cultural bias and to identify more effective information recognizing student abilities, interests and attitudes.

Disadvantaged students should achieve at a level appropriate to their abilities.

All students should ideally have a level of experience which will enable them to adjust satisfactorily when they enter the formal school situation and profit from the experience.

Students should know what they are expected to do and how well they are doing it.

Evaluation of achievement and ability should be based on techniques which do not automatically handicap the minority student.

5.130 Adults

There should be continuing contact with adult education students who begin, then drop programs, so that there is a greater understanding on the part of both school and student as to the relevance of the program.

5.340 Welfare

Minority group members should feel that they personally and immediately benefit by participation in the adult education program.

6.000 Instruction

6.120 Objectives of the instructional program (Elementary and Secondary)

The educational program of the district as identified in its stated objectives should acknowledge that different areas of the city represent different specific student needs.

The vocational education program should be as acceptable in terms of status to community, staff, and student as any other elective program.

Instruction in the area of vocational education should be realistic and up-to-date with particular attention paid to the repidly changing technology.

Individual differences in students, regardless of the cause, should be compensated for when selecting curricular material and method of instruction.

Students should be able to progress through curricular material at a rate and sequence that allows each student to achieve a maximum of success and limit his likelihood of failure.

Techniques and materials used in teaching should be such that they will effectively help students achieve identified educational objectives.

Curriculum should fullfill stated objectives.

Objectives should be stated in behavioral terms.

Objectives should be consistent with the district's philosophy of education.

District personnel should know what the district and curriculum objectives are.

The district should have objectives accepted by all levels that create programs rather than series of services.

General and specific program planning should involve those persons who will be affected by the proposed program.

The district should determine what is meant by "ethnic balance".

Any member of the community should be allowed to achieve his maximum educationa, social and economic potential regardless of the immediate cultural environment.

The program objectives for minority group students should include items that are specifically relevant to their unique needs as members of a minority group in addition to preparing them to be productive members of the community at large.

The district should have a sequential articulated system in which goals and uniform objectives exist.

Students should feel that the programs offered by the schools are relevant to their needs as they perceive them.

6.130 Organizational plan (Elementary and Secondary)

Students should be able to progress through curricular material at a rate and sequence that allows each student to achieve a maximum of success and limits his likelihood of failure.

6.140 Curriculum (Elementary and Secondary)

The school curriculum should meet the specific and unique needs of ethnic minorities and economically disadvantaged.

Instruction in the area of vocational education should be realistic and up-to-date with particular attention paid to the rapidly changing technology.

Separate courses of study are needed, with related materials at different ability levels within a subject area.

Curriculum offerings in the district should be related at each grade and school level so that material presented is logically sequential, relationship betwwen compatible courses at the same level is recognized, there is a systematic enrichment of concepts, and sequences and relationships that are agreed to are enforced.

General and specific program planning should involve those persons who will be affected by the proposed program.

6.150 Instructional arrangements (Elementary and Secondary)

Vocational education programs should be correlated with other school programs so that sutdnets receive mutual benefit from both academic and vocational aspects of their program.

The student's learning activities should not be confined to the classroom but should be such that all his normal activities contribute to his educational development.

Programs should be initiated only when the staff is suitably prepared.

Programs should be limited in terms of curricular value, not by the amount of space available.

6.160 Instructional services (Elementary and Secondary)

There should be close, active correlation of objectives, purpose, and activity between business and industry and schools in areas of vocational education.

There should be some provision for a guidance and counseling program at the elementary level.

All building facilities should allow for effective operation of the guidance function.

6.170 Curriculum extensions (Elementary and Secondary)

Adequate housing and space should be provided to allow development of present and future programs.

There should be close, active correlation of objectives, purpose, and activity between business and industry and schools in areas of vocational education.

The student's learning activities should not be confined to the classroom but should be such that all his normal activities contribute to his educational development.

6.180 Evaluation of the instructional program (Elementary and Secondary)

The evaluation program should be so designed and administered that the information obtained is relevant to the district's objectives.

Concern for the individual learner must be shown by having specific measurable objectives developed by the teacher that meet the needs of that student.

An effective process of assessing student success in meeting instructional objectives is needed.

There should be continuous study, evaluation, and revision of curriculum, including implementation on a systematic basis.

Programs deemed effective should be financially encouraged and expanded to their maximum potential.

6.230 Organizational plan (Post Secondary)

There should be some procedure through which effective educational innovations can be put into operation.

6.250 Instructional arrangements (Post Secondary)

There should be some procedure through which effective educational innovations can be put into operation.

6.260 Instructional services (Post Secondary)

Students should receive meaningful vocational/career guidance, beginning in the upper elementary school and continuing through completion of school with a means of continuing contact after leaving school.

6.320 Objectives of the instructional program (Adult)

Any member of the community should be allowed to achieve his maximum educational, social, and economic potential regardless of the immediate cultural environment.

The adult school should involve members of the total community in its planning so that it can effectively meet the needs as the community views them and should take every feasible step to make the community aware of its program.

The adult education program in the district should be coordinated with the programs of other agencies so that all adult education needs of the community are fulfilled.

6.330 Organizational plan (Adult)

Facilities should exist to allow the operation of a comprehensive adult educational program.

6.340 Curriculum (Adult)

Personnel involved in adult education should be aware of and able to use unique skills and techniques needed for working with adults.

Methods used in the adult school should be such that the students feel they are profiting by partaking of a program relevant to their needs.

6.350 Instructional arrangements (Adult)

Adults should be directed by qualified counselors into programs that will meet their needs and in which they will feel success.

6.380 Evaluation of the instructional program (Adult)

There should be continuing contact with adult education students who begin then drop programs so that there is a greater understanding on the part of both school and student as to the relevance of the program.

GOALS AND OBJECTIVES

> Public schools are "not doing the job" is a common cry, and one which we in education are as powerless to disprove as the critics are to support, since "the job" is defined in as many ways as there are "definers".

The 1968 Project Design Needs Assessment indicated that this is certainly true in Fresno; the citizenry, educational leaders, teachers and students simply do not agree on what the job is. We must, if we are to justify the existence of public education, provide a means to determine success or failure in understandable terms; unless our goals or objectives are clearly defined, this is an impossible task. Evaluation can only be realistic when conducted in terms of defined objectives.

There can be little question that the ineffectiveness of educational assessment both of students and programs is due in large part to the confusion surrounding objectives at all levels. Provisions of 1967 SB1, the 1968 revision of Division 7 of the Education Code Section 8573, and evaluative provisions required of federally funded projects, and action of the California Legislature of 1967 in creating the Advisory Committee on school district budgeting and accounting, reinforce the fact that Fresno must move toward the clarification of its purposes in terms of defined objectives.

SB1 (1968) for instance, provided considerable freedom in curricular development for California's local school districts, but the accompanying legislation, AB1168, made it clear that the freedom allowed must result in documentable gain for students subjected to curricular modification. Educators have long decried the curricular restrictions of law; now that they are largely removed we must produce as we have claimed we can, or be subject to a reversal of the faith bestowed upon the California public education system.

A Concept of Behavioral Objectives

In recent years, the work of such leaders as Mager, Bloom, Krathwohl and Popham has provided a conceptual framework of measurable objectives. Two definitions are critical:

> A goal is a general statement of purpose or intent; it is not concerned with a specific accomplishment within a stated time period.
>
> A behavioral objective is a statement defining a quantifiable achievement or change in behavior within a stated time period.

In an analysis of six school districts participating in the California State Department of Education study on PPBS (Program Planning-Budgeting System), authorized by the 1967 state legislature, the contract agents (Peat, Marwick, Mitchell and Co.) stated in regard to the districts' stated goals,

> All of the existing statements are too broad...where meaningful goals do exist there is little relationship with the activities and programs of the district. (:11-12)

Regarding objectives, they continued,

> ...objectives as defined above are, for all practical purposes, nonexistent in the pilot districts. (:11-12)

Had Fresno been one of the participating districts, these comments would still have been appropriate.

In an analysis of the Fresno system by Dr. Robert Mager in February of 1967, the following framework of basic goals and objectives was suggested and discussed with the project staff.

A Hierarchy of Philosophy, Goals and Objectives

Board of Education - Philosophy

A primary function of the Board of Education is to determine policy. A statement of philosophy does exist as does a file of Board policies. Taken together the existing philosophy and policies serve to provide direction, but the board has not defined its values as such. Statements of Values in this sense would increase the specificity of the Board's philosophy and provide improved direction for the administrative staff. It is appropriate that Board of Education philosophy not be behavioral in nature; to tie down such statements to specifics would tend to limit rather than assist the superintendent and his staff in exercising their professional function and could tend to ossify program development. Policy (or implementation statements) spell out the degree to which the Board wishes to determine how the philosophy is to be implemented and any desired limitations.

Superintendent - Goals

In pursuing the policies defined by the Board of Education, the superintendent should provide regulations for their implementation, based upon goals (non-behavioral). The goals should be relatively stable over a period of years and should be derived using available staff. The goals should still be general in structure, but should provide sufficient elaboration upon the directives of the board to allow identification of specific district programs, their relative emphases and their interrelationships.

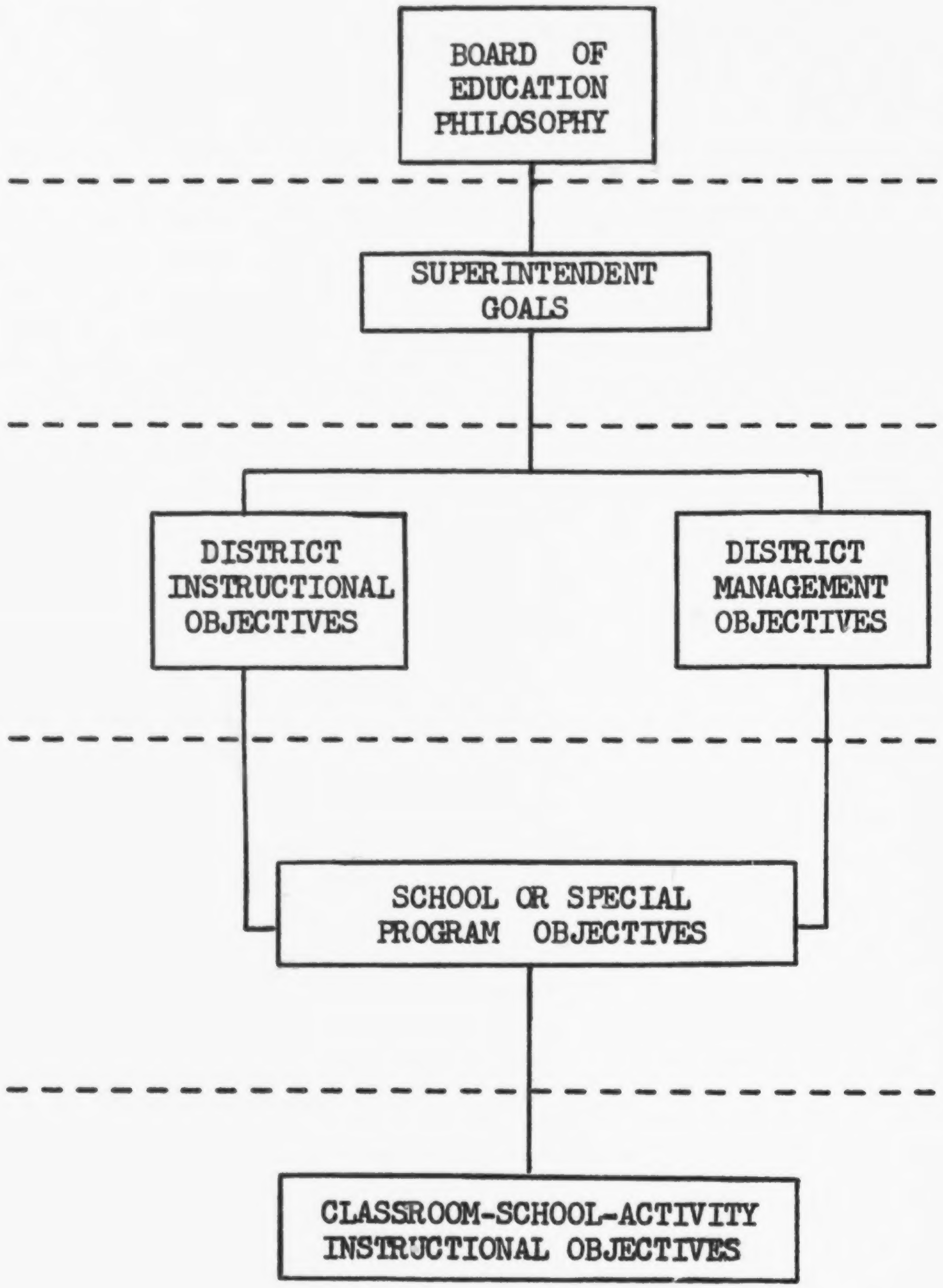
Instructional and Management Objectives

The superintendent carries the added responsibility to establish instructional and management objectives, but should do so in consultation with those directly influenced by the product. At this level the criteria for behavioral objectives would apply. Specific, measurable objectives should be written for each school level, for each staff function, and for each special program within the district. Each school should likewise be provided, through cooperative efforts of the superintendent and principal, a realistic set of objectives adapted to the range of performance acceptable for the particular school (see Management Accountability, II-21). Both instructional performance objectives (on a school and/or program basis) and management objectives (those pertaining to cost, funds, facilities, personnel) should be defined at this point. These objectives should, moreover, have within them provisions for the element of time, whether the objective is a continuing one, evaluated periodically, or whether it is to be a short-term objective to be met in a semester or a year.

Operating Level Objectives

At the operating level (school, service function office, staff office) behavioral objectives are also crucial. Each school staff member should, in cooperation with the principal, have defined objectives for his particular function. Each school department should do the same. The teacher, in turn, should be able to display his classroom objectives, likewise formulated in cooperation with his department head and/or administrator in charge of curriculum. In the ideally operating system problems involving staff role and function should be minimal, and students should have a clear idea of what is expected of them, and what the purpose of each activity is.

A FRAMEWORK FOR GOALS AND OBJECTIVES


BOARD OF EDUCATION PHILOSOPHY
SUPERINTENDENT GOALS
DISTRICT INSTRUCTIONAL OBJECTIVES
DISTRICT MANAGEMENT OBJECTIVES
SCHOOL OR SPECIAL PROGRAM OBJECTIVES
CLASSROOM-SCHOOL-ACTIVITY INSTRUCTIONAL OBJECTIVES

Statements of philosophy (values), general district purpose and function; provide direction to administrative staff (philosophy not stated behaviorally). Adopted by Board. Policies constitute statements of implementation.

Statements of implementation (regulations) for Board of Education policy. Concern emphases of district programs. Not behavioral in nature; should be relatively stable over a period of years. Defined by Superintendent.

Operational definitions of specific objectives (measurable) with time function accounted for, based on goals set by Superintendent. Responsibility of Superintendent. Derived in co-operation with staff, principals, teachers, appropriate special offices, and coordinators.

Operational definitions of specific objectives (measurable) with time function accounted for. Based on district level objectives. Individual school variations taken into account. Responsibility of director or principal. Derived in cooperation with school or office staff, approved by Superintendent.

Operational definitions of specific objectives (measurable) with time function accounted for. Based on school or program objectives. Derived in cooperation with principal, department head or teachers.

SAMPLE GOALS - OBJECTIVES

Vocational Education	Basic Skills	Guidance Objectives	
Within the period of time that the student is under the care of the public schools of the school district he shall be provided with adequate knowledge and skill to allow him to take his rightful place in the community economic structure as a productive participant.	Every student shall have the opportunity to develop basic skills which shall allow him to function within society. The school district shall provide basic reading instruction to all students at all levels commensurate with their abilities and needs.	The school, through its teachers and programs should foster the individuals physical and mental health, enrich his life for present living, and encourage self-direction and independent thinking.	Board of Education Philosophy
Each student shall by the end of his secondary school career have developed a marketable skill appropriate to the defined needs of the community.		A comprehensive program of guidance and counseling shall be established within the district's elementary schools.	Superintendent Goals
By the beginning of the school year 1971-72 a specialized course in auto mechanics shall be provided within the district at a selected high school, the program to include facilities for 80 students at each level of a three year course. Success of the course shall be determined in terms of the number of students placed in jobs directly at the completion of their high school career, a majority of students desiring immediate employment will be considered successful.	By the year 1975 each student within the school district shall have developed skill in reading commensurate with his ability, age level, socio-economic status as determined by tests developed by the District's instructional staff in each grade.	By the end of school year 1970-71 a written plan to encompass a program of preventive guidance will be completed, and approved by the department of guidance, the combined principals group and district administration.	District Instructional Objectives

District Management Objectives	School or Special Program Objectives	Classroom-School-Activity Instructional Objectives
By the beginning of the school year 1970-71 budget provisions will have been made to implement the preventive guidance program in the school year 1971-72.	By the end of school year 1972 each student in the primary grades identified as an "exception", (beyond the range of change) in terms of achievement data, shall have had no less than two interviews involving teacher, school psychologist and student, a record made of the interview, and recommendations made for steps to be taken to improve the dificiency.	
	The average tested reading ability considered adequate for Lomax Elementary School considering the existing high ability and high SES factors shall be one year above grade level as tested by year-end tests in the year 1972.	Acceptable reading achievement for the first grade student shall be determined by an average or better score on each sub-section of the Ginn Third Reader I Achievement Test, administered at the end of each semester.
By the end of the school year 1970-71 facilities including space and equipment as agreed upon by educational specification committee and equipment as selected by the division of vocational education shall be provided the school selected to offer the course.	Within the selected high school at the end of the first year of the automobile mechanics courses operation no fewer than 70% of all students who completed the first year course shall elect to continue into the second year advanced course.	The student shall demonstrate his ability to tune an automobile engine by performing a complete tune-up of one V-8 engine and one 6-cylinder engine within two class periods each using procedures acceptable to the instructor.

Characteristics of the Behavioral Objective

No detailed analysis of the behavioral objective is intended here, but an understanding of basic characteristics is necessary to place this discussion in context.

A statement of a behavioral objective, as previously defined, specifies a quantifiable achievement or change in behavior within a stated time period. The objective statement must contain:

a. an outcome, or what is to be achieved

b. conditions, how the achievement is to be evaluated and within what period of time

c. criteria, how well the achievement is to be accomplished

d. rationale (optional) indicating the purpose or reason for seeking the objective.

For example:

at the end of the school year 1970-71, all	condition
6th grade students at Kennedy Elementary School shall demonstrate proficiency in basic arithmetic	outcome
by scoring at grade level or better on a standardized arithemetic test approved by sixth grade teachers of that school.	criteria
The test will serve as a basic standard or objective for all graduates of the school and will be used as a basis for placement in 7th grade classes.	rationale (optional)

Criteria for evaluation of objectives may be listed as:

a. Is it clear? Is it understood by all concerned?

b. Is it complete? Does it cover all aspects in need of coverage?

c. Is it worthy? Is the objective sufficiently significant to merit emphasis or attention?

d. Is the objective at an appropriate level? Is it reasonable to expect the anticipated performance by the student?

Objectives and a System of Management Accountability

Definition of objectives is central to a system of management accountability. As previously stated, evaluation cannot be realistic or valid unless based on objectives defined clearly enough to be measured. Accountability, in turn, can only be employed to the extent that evaluation is realistic and valid.

Factors for Consideration

The initiation of a system of behavioral objectives, although logical in theory, must be approached with caution; the concept of evaluation and accountability may appear threatening. It might be assumed in the narrative thus far that an assumption is being made that creation of behavioral objectives, goals, and evaluative tools is a simple task. Exactly the opposite is true; perhaps no necessary task in education is more difficult than the soul searching necessary to rethink our past activities, purposes and philosophies to the point of being able to state our objectives realistically and measurably. A clear threat exists in that we may find some of our ongoing activities to be invalid or ineffectual. Many educators feel that this task is long overdue.

The concept of behavioral objectives, characteristics and criteria will not be discussed in further detail here since the sources listed

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at the beginning of this section provide adequate delineation and direction. It is necessary to point out, however, that the behavioral objective criteria of measurability is a stumbling block for many, since much of what we feel is important in education is difficult, if not impossible, to measure realistically. Attitudes and values (the affective domain), for instance, are not easily defined or measured; cognitive (factual material) and psychomotor (physical processes) areas are not so difficult.

One pertinent and most significant caution must be made. Since the cognitive area is easiest to work with and most clearly documentable a tendency exists to interpret all objectives in these terms; the difficulty involved in establishing affective objectives must not become a creeping justification for rendering them unimportant in the educational process. A real threat, then, exists that education, particularly with the proliferation of materials created by private business, may tend away from the non-cognitive areas of learning with potentially disastrous affects upon the society. There can be little question that mankind's most serious problems in recent centuries have been largely those involving human relations, attitudes, and beliefs. As science improves our physical surroundings, we seem increasingly less able to handle the social changes that come about as a result. It must be emphasized that in establishing such a system of objectives. solid emphasis must be placed on the affective domain in education, however difficult.

POLICY AND REGULATIONS

As values define a district's philosophy, so do objectives define a district's goals. These values and objectives thus constitute the "whats" of the educational process: the "how" is defined through policies and regulations.

The Board of Education has the responsibility to clarify philosophy and values through statements of policy; the administration has the responsibility to define its goals and objectives in terms of regulations. Policies and regulations are, then, statements of implementation which provide the basis for the district's day-to-day operation. A parallel may also be drawn to the district staff's obligation to define programs through management and instructional objectives. Procedures adopted by staff constitute the "how" or the implementation of these defined objectives. The relationships are:

Level		Implemented By
Board of Education	Philosophy (Values)	Policy
Administration	Goals (Objectives)	Regulations
Staff	Programs (Objectives)	Procedures

Each level must be consistent with those above it in the hierarchy. Consistent and effective operation of the district's function is possible only to the degree to which clarity exists at each level. It must also be recognized that a hierarchy does exist, that regulations, for instance, must be consistent with goals and objectives. The existing structure of policies and regulations within the Fresno City Unified School District is adequate; no significant change in procedures is required. The substance of policies and regulation, however, must be constantly compared to developing patterns of behavioral objectives and the values toward which they are directed.

An inherent danger exists in this process, however, in that existing policies may tend to determine objectives rather than focus on the basic value and then its attainment.

It should also be borne in mind that policies and regulations will, in most cases, be much more voluminous than the philosophy and objectives they implement. In the absence of clear direction, it is incumbent upon the administration to establish implementation details. When philosophy and goals exist, however, consistency can and must be maintained between the "what" and the "how".

IV. COMMUNITY EDUCATIONAL PLANNING

> "Long-range planning deals with the futurity of present decisions in terms of setting goals, developing strategies to achieve them, translating strategies into detailed operational programs, and assuring that plans are carried out."
>
> -- George A. Steiner
> Managerial Long-Range Planning

COMMUNITY EDUCATIONAL PLANNING

Planning process

A predominant characteristic of the urban age in which we live is the constant redefinition of the working relationships between governmental jurisdictions. The simple compartments which identified a separate and distinct role for national government, a sector for the states, and home rule for the municipality and its educational institutions are now a tangled maze of complex relationships and overlapping, often contradictory, aims.

Instead of a single frame of reference, today there is an entire pyramid of planning jurisdictions surmounted by the growing influence of the national government. Within this context, planning no longer can be effectively carried out within the confines of a single agency even in medium-sized urban areas such as Fresno.

It is conceded that planning decisions are political decisions and, therefore, are rarely unanimous community views. The absence of any real degree of area-wide consensus is a fundamental obstacle faced constantly by any planner in coping with interagency problems. If it can be assumed that interagency consensus can be achieved on a broad set of area-wide goals, what instruments or techniques can be devised to bridge the gaps between groups, governments and the ultimate beneficiary, the people? Achievement is an immensely complex task and it requires accommodation and innovation of the highest order.

The effectiveness of contemporary planning can be measured by the extent and nature of the interaction between those who have the ultimate

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stakes in a resultant action. Participants include the planners (using the term in the broadest sense to include the professional staff employees of government), elected officials and their appointed advisors, and the non-governmental individuals and groups. In a contemporary urban framework, such as the Fresno-Clovis Metropolitan Area, no single jurisdiction can make any significant decision without affecting another. In this process we cannot overlook the fact that in addition to the cities of Clovis and Fresno,and the County, the Fresno City Unified School District also is a body of elected officials with the same degree of autonomy as the cities and county and responds essentially to the same decision-making process.

Recognizing the interrelationship between schools and the quality of the residential and total urban environment,and the policy-making responsibility of the school Board with respect to education and school locations, should elected officials be participants and make commitments concerning the physical development policies, goals and plans of the Fresno-Clovis Metropolitan Area? In today's society, with its complicated and conflicting sets of values, participation by the School Board as well as other elected officials is not only necessary but essential.

It has become clearly evident in Fresno that planning focused solely on the physical dimensions of the community is no longer adequate. The myriad of active programs here which cut across traditional lines demand that the planning process be reoriented to consider social and economic issues.

The basis for integrative and comprehensive interagency decision making would be a unified set of general primary goals which identify Fresno's aspirations in critical areas of concern such as education, employment, housing, poverty, orderly development and environmental quality. Explicit policies would be articulated to provide the dimensions within which plans and programs would be detailed to meet physical, social and economic needs. The key to the effectuation of such a program would be an interdisciplinary procedure which overcomes the shortcomings of the traditional physical planning program.

Description of policy planning.

Within the context of contemporary community development processes, revised planning and decision-making approaches appear to be justified. This approach can be described as normative planning and decision making in which the elements of "where we are going" and "how do we get there" are key factors. The planner, in the process, receives the guidance necessary to carry out his responsibilities effectively. Basically, policy planning is the establishment at the very beginning of broad, primary goals reached by consensus of the legislative bodies, the interacting agencies and the private sector. These goals are then refined and made progressively more specific as action programs are developed.

Normative planning develops the broad, general bases for action, whereas technical planning is concerned with specific, established purposes and procedures to be employed in achieving those goals. Much normative planning is already done by the elected officials such as councilmen and the school board. Their goals are implemented through codes or carried out by construction programs. And, as part of the democratic process, these goals are often subject to conflict and compromise.

Goals, once established, lead to policies which become the basis upon which governmental agencies structure their activities. The dilemma, however, is that the traditional planning process has not been an effective mechanism to bring about explicit goals necessary for a proper foundation to decision making. In addition, goals that do exist in the various agencies of the community are often contradictory, overlapping, or have gaping holes in between; and, local agencies seldom systematically or comprehensively evaluate their long-term goals.

The development of general, primary goals should result from the interaction of three groups:

1. The public and its voluntary organizations,
2. Governments as expressed by their elected officials and key appointive administrative officials,
3. The professional aides who staff the planning offices. (It is to be assumed that all public and semi-public agencies have one or more staff responsible for planning.)

Policy planning sets the broad interagency framework for action and forms the basis upon which more detailed, comprehensive plans and decisions are made. Policies are the link between general goals and the more specific recommendations.

To some extent policies already exist, but in various places and forms — explicit statements in comprehensive plans, mandatory sewer connection ordinances, school location principles or simply rules of thumb. Policy planning would bring these together, resolve conflicts and add new policies where appropriate. By so doing there is greater assurance that all agencies which make decisions affecting community service and development will be operating within the same framework.

Benefits of policy planning.

Policy planning will benefit the decision-making process in the following ways:

1. The uncluttered character of the policy statements facilitates public understanding and participation in the planning process.
2. The policy statements permit and encourage intimate involvement in the planning process by elected officials.
3. The policy plan serves as a coordinative device, bringing together diverse agencies that have an impact on community development and change. In this respect, this approach is especially useful in multi-jurisdictional areas.
4. The policy plan provides a measure of stability and consistency in the planning program and will not be made obsolete by changing conditions.

The policies plan would serve as an ideal integrative tool, particularly to bring together the physical, social and economic programs which are now characteristically part of the planning efforts of the community.

Interagency decision making would be aided further by the policies plan concept because it is politically less difficult to secure intergovernmental agreement on principles than on potentially controversial proposals that are part of the traditional plan approach. Commitments, an essential ingredient in interagency decision making, would be secured under this procedure.

In this approach the responsibility for the preparation of policies for education would rest with the Board of Education; on the other hand, primary responsibility for the others would rest with city and county government. Others with stakes would participate in the policy-making process and ultimately, a balanced, consistent, integrated set of policies ideally would be the result.

Community data register.

In today's complex and interdependent world all decision making requires a ream of supporting information for justification. Most public and private agencies collect a wide variety of data on a more or less continuing basis. There has arisen an increasingly greater need for interchange of this information between agencies. This exchange is seen as valuable in coordinating programs of various agencies, such as school site locations which require cooperation of both schools and local government. It is often also a matter of economy to use data gathered by some other agency rather than making a separate collection for each program or agency.

At this point in the development of our local metropolitan area it has become apparent that there is such a large and diverse number of agencies and groups involved in data collection that current attempts at informal cooperation and coordination of data exchange are touching only the surface of what might be possible. A formal attempt needs to be made to accumulate information about all of these data elements into a central register that could then be used to aid in the retrieval of data by the cooperating agencies.

If the policies plan approach to decision making is adopted, the need for a data register and, in fact, a central data system becomes imperative. Once primary policies are adopted for a community as a whole, then all agencies — public and private — will need common, interrelated basic data about the community, past, present and future, to aid in the establishment of policies.

With the background of local practice and statewide development, consideration is given to the construction of a data register for this area (Fresno-Clovis Metropolitan Area, Fresno County or some other local designation). Basic to its establishment are certain principles or criteria of a coordinated data system which include:

1. The system should be flexible and lend itself either to expansion or redesign in the light of increased experience and changing requirements.
2. The system should be related to the regular operating process of the system participants.
3. The system must be user-oriented.
4. The system must return benefits to data suppliers.
5. The system must provide adequate safeguards to protect the

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confidentiality of data and to insure proper authorization for use of data in the system.

6. The system must not exceed the manpower, equipment, or financial resources of the participating agencies.
7. The system must enjoy the full support of heads of the participating agencies.
8. The development of any system must bear in mind other statewide and regional information systems and changes in Bureau of Census procedures.

A centralized system using electronic data processing (EDP) would meet these criteria. This is the approach being investigated currently by the City of Fresno. Since considerable investment in EDP hardware will have already been made by a government agency for accounting type work, there is a basis here for greater utilization of the equipment by converting other types of data — land use, population, etc. — to a form that can be used by EDP. Equipment could all be located centrally with data storage, processing and retrieval handled at one location, or data storage could remain in the various agencies which will each have equipment capable of being plugged into an "information central" which would then serve as a collection and dispersal point for all agencies. The data processing and manipulation function generally would remain with the collecting agency.

Data register systems compatibility.

In addition to satisfying multiple local agency needs, the

the designers of the local interagency planning data register system should consider need for compatibility with other systems.

The California Department of Education is actively planning a statewide education information system to be implemented in nine regional centers. One of these is tentatively earmarked for Fresno, to serve the central San Joaquin Valley. Management of the Fresno City Schools is aware and involved in this planning.

California is also working to sophisticate statewide information about land use. Regional planners have recognized the need for better data systems about land use.

Westside planning (for the vast potential of the western side of the entire valley) is becoming a major coalition of agency efforts, some State, some University of California, some by other agencies. The potential effects of Westside plans upon the Fresno metropolitan area are unknown, but those who are close to regional planning activity believe they may be dramatic.

The costs and the problems of completing an effective Fresno interagency planning data register system are potentially immense. Fully developed, it would undoubtedly be computerized. If such an electronic data processing system also served operational needs for accounting functions, system design would be further complicated.

To add the criteria that such a system should additionally, be compatible with vertical (State wide) data register systems is perhaps a back-breaking challenge. Not to consider such criteria, however, might result in duplication of effort and mismatches of information of equal liability. The essence of success lies in many smaller coordinative actions prior to computerization. Some of these require little added cost or effort and have already begun in Fresno.

V. A RESPONSIBILITY FOR TOTAL HUMAN RESOURCE DEVELOPMENT

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> "Wisdom is the ability to discover alternatives."
>
> -- Paul Eldridge
> Maxims for Modern Man

A RESPONSIBILITY FOR TOTAL HUMAN RESOURCE DEVELOPMENT

The Priority of Major Strategy Decisions

It must be recognized that what is provided herein is not more attention to the small pieces of the large educational problems; it is not this focus that calls for the best efforts and deliberations of the governing boards and others. Rather, it is the large problems themselves — the over-all strategy — which first needs resolution in order to provide the framework for solving lesser parts. Those responsible for education in Fresno need to consider — and be ready to implement — sweeping changes rather than tiny, relatively insignificant ones. This report provides these alternative kinds of dramatic changes — over-all solution strategies — that hold promise for meeting challenges of education in the future.

Alternate decision models as major strategies for 1975 and beyond can be visualized now.

Focus on Responsible Leadership

The citizens of Fresno face a challenge in educational planning. From the pressures of change that underlie our society, education will change, in spite of itself, even if those responsible for it were indifferent, which they assuredly are not. It can become altered willy-nilly. It cannot help it. It will become altered, if only by accretion, if only by virtue of the fact that there will be more of the same thing, quite apart from other considerations. The question is whether what comes out

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of the process is to be undisciplined and amorphous or regulated and symmetrical. This will be determined by the courage and wisdom of management and policy boards or the lack of these qualities.

Education hourly feels the impact of scientific discoveries. The task of the educator is to assess the present and gauge the future in relation to the onrush of events. By deliberate thought, leaders can plan and build for tomorrow's incredible world.

Description of Alternate Models for a 1975 Decision

In thinking through alternative futures for education in Fresno it is advantageous to give consideration to some rather clear-cut alternative models or descriptions. These alternative models can perhaps best be described by an examination in some detail of their underlying philosophy, their implications for school facilities, and their meaning in such matters as personnel, curriculum, instructional methodology, financing, and other considerations. Each of these elements will be discussed in a way that allows easy comparison.

"Two roads diverged in a wood, and I —
I took the one less traveled by,
And that has made all the difference."
-- Robert Frost
Mountain Interval

Alternative Model A:
THE STATUS QUO OR EDUCATION AS USUAL

The United States fostered the ideal of popular education — "education for all the children of all the people". Though we have fallen somewhat short of that ideal, it still remains. A praiseworthy result has been an assault on the citadel of ignorance, the bastion of illiteracy. American education has, in any given generation, made Americans out of foreigners. American education has made one nation of many peoples, geographical and cultural. It has given unity of purpose to people in far-flung and diverse environments. It has been fiercely competitive, inculcating in our people a strong feeling of independence. Its product has been truly amazing, whether in the "little red school house" or the ivy-covered halls of research. It has unquestionably been one of the ingredients that raised the status of this country from that of a colony to a world power in a century-and-a-half of relatively primitive life. In a classless society, however, it has unwittingly created an aristocracy of achievers, accepting the situation as a matter of course under the impact of the theory of individual differences. Under its influence, poor boys have become great presidents, immigrant urchins have been transformed into tycoons and savants. Throughout the years its ultimate standard has been that of academic excellence.

Philosophy

In philosophy this system — the status quo — is direct and uncomplicated, uncompromising in extolling superiority and compensating courage. It is unflagging in its advocacy of the uniqueness of the local scene.

This has been inevitable in view of the variety and historic isolation of disparate communities. In consequence, there is in our national makeup a genius for adaptability and invention. This, in turn, has led to public participation in local, and ultimately national affairs. And always the criterion has been individual excellence. We have quite unashamedly rationalized and paid the cost of attendant inexcellence.

Facilities

The American educational system has performed prodigious tasks with a slate and McGuffey's Reader. The little red school house is a revered national symbol of independence and learning. The urge for learning has been predicated upon the solid actuality of an institution with at least four walls in which through twelve years was taught a series of sequential courses, moving grade-by-grade from the simple to the less simple, and all pointing hopefully to the academy, college, or university. And always there was provision for some form of extracurricular activity to vary the program, to relieve the tired body or revive the weary mind.

Personnel

"Teacher" is the focal point of the system, the most important person in the school. As schools grew bigger teachers were confronted with about thirty boys and girls each, whether representing one grade or a number of grades. The teacher-pupil relationship has been pivotal in the academically polarized American school. When the junior high school and senior high school came along, resulting in departmentalization, weakening the student-teacher relationship, counselors were added to restore it, at least in part.

Curriculum.

The curriculum of the schools has been as direct as the philosophy, and as pragmatic, and as simple as the physical plant, beginning with the three R's and progressing through various additions and refinements. Subject matter was crystallized so that it could be taught in discrete units sequential in character. In line with the democratic ideal, while achievement was the ultimate criterion, the less fortunately endowed who avoided the dropout blind alley have been given "social" promotions so that they might be graduated with their peer groups. Throughout, the entire system has been oriented toward the university. Other less highly regarded facets of education, such as the Smith-Hughes, the George Dean, and George Barden Vocational Education Acts, and other such programs, when they appeared, were strictly peripheral and have never taken sufficient root to survive without the continued nourishment of Federal subsidies.

Methodology.

Methodology has been simple, mostly through lecture-dispensing information. Memorization of dates, statistics, and entire passages has been a frequent component. Contests and "bees" have played a prominent part in class procedure. Cramming has been inevitable. Tests, until recently of the essay type primarily, were routine. Only in depth and quantity have large systems differed materially from smaller or earlier ones.

Scope and conceptual framework

Fundamentally, American education has been conceived essentially as formal instruction dispensed to groups of students in-doors, using report cards as inducements and evaluators, with credits awarded toward graduation and matriculation in institutions of higher education. Stated simply, American education has been like a ladder, rising by rigid gradations from kindergarten through grade twelve. This pattern has been with us so long that it provides the characteristics of human and institutional inertia. Members of the teaching profession and public alike tend to feel comfortable with it. If and when changes come, they tend to be met with open hostility at first and accepted eventually only with reluctance. There appears to be little spontaneous generation within the organism that could lead to any profound revision.

Administrative structure

The faculty, principal, and superintendent are still the prevailing local school authorities, very much in evidence in every local school district. As institutions they are sacrosanct and appear indispensable.

Above these, into the further reaches of the state, are the State Board of Education, the chief state school officer, and usually various other units or persons, overshadowed by the legislature.

Alternative Model B:

A STREAMLINED VERSION OF PRESENT EDUCATION, CAPITALIZING ON A MAXIMUM CONTRIBUTION OF TECHNOLOGY

To review Model A, the status quo, is not to say that present-day education is all bad. Far from it! It is not to say that we need to push the panic button in an effort to salvage something. It is to say that "business as usual" may be passé, that our system may be so deeply rooted in the past that change will be accepted only at the urgent prompting of technology. Today's educational objectives can be clarified, and perhaps sharpened, without being transformed, in order to serve during the transition of education into the bursting future.

If at first glance it should appear that Models A and B have little in common, a careful examination will reveal that with Model B we are still living with one foot in yesterday. The similarities become obvious when we consider the following facts:

1. The school, whatever the language of its apologists, is still for all practical purposes a recruiting ground for the university.
2. It is subject matter oriented, with clearly defined segments and sequences of compartmentalized knowledge.
3. It organizes and operates in terms of grades and credits.
4. It caters to the intellectual segment and favors the economically advantaged elements of the population. The pattern of Model B, it may be seen, is essentially the same as that of Model A.

Philosophy

Such innovations as are seen in our school system have been for the most part forced upon it, not fostered by it. The resulting accommodation contends that the inevitable shifts in our national scene, that is, in the direction of technology, can throw some light on how better to

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accomplish our time-honored aims. Technology and pedagogy are learning to walk together. Basically, the philosophy is the same in this streamlined Model B as in the "education as usual" Model A.

Facilities

This rationalization just presented, that technological transplants can provide dramatic improvements, has led to the welcoming by the establishment of an influx of innovations. Thus we observe such addenda as flexible room arrangements, electronic labs for foreign-language instruction, radio and television equipment, team-teaching stations, individual study carrells, and on and on. It should be noted, however, that the unprecedented use of strange techniques serve the traditional ends, merely achieving them by revolutionary means.

Personnel

Obviously, new personnel are needed to man the new stations, operate the new machines, monitor the new gadgetry. If one teacher now can make contact — even if distant — with a hundred pupils instead of thirty, it does not necessarily argue that teachers are more efficient. Teaching aides and consultants take up the slack. Latest specifications call for more consultants per unit of pupils. Team-teaching, an integral part of many modern schools, is already well-established. And we are doubtless only in the beginning of this process of proliferation.

Curriculum

If our thesis is correct, that "modern" schools are little more than modified versions of traditional ones, then it follows that the curriculum is but a re-issue of an old standby in gaudier colors.

Reading, writing, and "new" arithmetic are still central though promulgated less dully. The university not only still implicitly dominates the offering, but to an extent stipulates the manner of its presentation. Today's offering may look different on registration day, but later, whether in the laboratory or the kiosk, whether enunciated by word of mouth or by a transistorized mechanism, it seems strikingly familiar.

Methodology

Needless to say, if the curriculum merely appears in a new garb, the means of introducing it are unblushingly modern. High schools in particular are experimenting with flexible scheduling, different ways of grouping, and individualized study. More self-study and even computer-assisted instruction are on the horizon. Teachers are using programed instruction and audio-visual equipment. Administrators are scrutinizing curricula as to their relevance for a space age. Guidance and assessment techniques tread on one another's heels.

Financing

The source of financing in Model B will remain essentially the same as with Model A: the local unit, the State, and the Federal government. Our investment will grow with every advance, every supposed advance, and every frill. Basic designs for solid evaluations are perennially and conveniently missing.

If it becomes monotonous to be reminded repeatedly that the purview of education remains substantially static, that we have traditional fare served up in provocative new combinations and utensils, the truth does not look the worse for being kept bright. There is inherent in this observation, moreover, another generalization — that new clothes do not change the essential man.

What is different, as already indicated, is the manner in which this old-new phenomenon is offered.

Alternative Model C:

VOCADEMIC, A BLEND OF EDUCATION IN PRODUCTIVE WORK AND COMMUNITY LIFE

In discussing Models A and B, a description was given of an educational system that has long since, in the view of some, outlived its usefulness. Today's education, even with its sophisticated gadgetry, is under severe indictment.

To repeat, or summarize, education must be rescued because:

1. It is too largely academic and has disregarded a large part of the population — those not wanting to matriculate in college, or incapable of profiting by instruction in a higher institution.
2. It is more deeply concerned with erudition and diplomas than with living tissue.
3. It is shackled by tradition, having failed to learn the lessons of and keep pace with industrial, scientific, and social developments.
4. It is shortsighted in not having seen the vast implications of the population explosion.
5. It still favors the intellectually, and, for the most part, the economically advantaged.

Hence, the need for a shift in educational thinking. Model C presents a striking shift of values from those heretofore considered.

Philosophy

A dramatic, almost sensational, shift in human values; hence, in educational assessment, is forcing its way into universal acceptance, over bitter opposition in some quarters. Ironically, it is the old concept with which we began, but of which we long ago lost sight — "Education for all the children of all the people". It has been on the drawing board all the time but never go off. "Education for all the children!" Not merely for the white children! Not alone for the intellectually gifted! Not merely for the one in five who can make the maximum gain from a traditional college career!

The new emphasis (not the new thinking) goes one essential step further. It is the whole man who is educated, not just the mental man. It is the complete person, the entire personality who is the citizen, not just his thinking equipment.

Thus, education is a process of feeding and developing the complete individual, whatever his inclination, whatever his talents. Such education can take place anywhere, inside a building or outside. Not only is it not confined to a place (a school house), but it is not polarized toward any institution (the university for instance) except the ultimate unit, society itself. In short, the new emphasis would take all the values out of the ore, not the gold only. This constitutes a revolutionary change in educational philosophy as it is being applied at present. It introduces the vocademic, which holds that education is closely akin to work and thus part of life. It is, indeed, life.

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Traditionally in the United States the educational process and establishment have been conceived as something precious that needed to be rescued from a sterile environment and protected in a sort of sacrosanct hideout. This is a holdover from those early times when only the professions needed special instruction. With the fierce tenacity of the "ins", the establishment too often refused to acknowledge the pageantry of progress.

It is clear that education is work and that work can be educative, if not education. Being on a creative job means becoming educated. As someone has put it, "What we need is not to realize the ideal but to idealize the real." The world of productive and satisfying employment is the campus of the school of tomorrow. Men learn most readily while engaged in activity which they like. There are no voluntary dropouts from such a school. There is no need to labor the matter of advantages and benefits of the type of education outlined above, but one more thought leaps to the mind. It will be generally conceded that much of the unrest among young people today — the demonstrations, the riotings, the obstreperousness — stems from the fact that young men and women constitute a lost generation, that they occupy a vacuum, that they have no role in society. Schools are little more than custodial and isolated, nonrelevant institutions. Give students suitable employment and a choice in making their life decisions, and student unrest and demonstrations should end along with dropouts.

Facilities

As already indicated, in the vocademic system the activity is where the work is. Consequently, the facilities are for the most part those of the advancing world, from the fish hatchery to the airplane factory, from the gas station to the hospitals, from the corner market to the downtown public service agency. New gains crowd upon us, each so self-evident as to need only the mentioning.

1. The school itself — high school, community college, university — needs less equipment, less floor space than now because the student-body is scattered everywhere, eagerly engaged in satisfying, productive employment. Thus, the cost of buildings and maintenance shrinks. Why build an imitation factory near a school building to show students how a job or process is performed when they can actually perform it on the job?
2. By the same token, why equip a shop or classroom with expensive or hand-me-down machinery that becomes obsolete with industry's annual or biennial retooling? Particularly, why do this when industry itself is constantly — for its own survival — installing the latest machinery; and all of this can be made available to the educational enterprise? In a large measure facilities are integral with the setting — outside the conventional classrooms where core skills and attitudes are still developed.

Personnel

As specialists in every field actually on the "firing line" take over much of the training, in the "real world", it might be supposed that the number of people needed in the academic structure would decrease. This is not necessarily true. Assignments and titles would shift, but it

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is too soon to say that substantial savings could be made in this direction. There would continue to be a need for clerks, typists, assistants, aides, and the like. Perhaps even new people would be needed.

Many teachers would cease to monitor classrooms, mark rolls, make and administer tests, and ride herd on groups of young men and women. However, no less preparation and dedication would be required of them in their new roles. They would become instead coordinators, supervisors, and in some cases foremen on the job.

Of course, the foregoing is to some extent oversimplified, but for the most part an industrial world hurting for specialists, and an educational world with eager brains at its disposal, can eventually surmount most of the problems. In fact, it is being done quite frequently now in a kind of extracurricular way by some faculty members and their students, particularly at the college and university level.

The major effect of this vocademic program on teachers will be in the demands for an increase of the professional requirements placed on them. In the first place, for those not personally or immediately engaged in occupational education (this means mostly secondary college-prep teachers), curricula will necessarily require changes which will relate more to the real world, the world of work, and basic knowledge which will permit students and graduates to function more adequately in other-than-school situations.

For teachers in post-secondary institutions which are more academically or professionally oriented, it means more teaching in the practical application of the theories and ideas they promulgate, and it means the teaching, not of facts alone, but the ability to be constantly learning and inquiring to apply knowledge to real situations (this applies also to secondary vocational and college-prep teachers). It means, in general, a new approach to the purpose of education, and a revision of the attitudes and methods of many educators.

Occupational education teachers, especially, will need to update and improve their skills, will need to know what conditions are in the world of work. This will mean that teachers must enter that world, at least temporarily, to learn new developments and new skills. And all teachers must acquaint themselves in such a way that can help students maximize the general and specific learnings in any given situation.

Curriculum

It must be emphasized that the basic skills are still to be taught in schools. When formal training is combined with the world of work, the students learn much more. They learn to be dependable, how to meet and get along with people, how to use the fundamental processes in real-life situations, how to care for equipment, how to keep records and handle money, how to make decisions, and so much more. Their instruction and experience are no longer simulated, theoretical or second hand.

In this milieu the student can find his permanent niche, or he can have a sequence of assignments of experiences leading to a future career. Moreover, he increasingly has something to say about what he is to be doing and what he is to learn.

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Methodology

It is difficult to explain this new methodology because its components are so diverse in makeup and geographical setting. But the required new methodology is premised upon productivity, not merely grade achievement, upon the involvement of the whole man, not only the intellectual one. Here the student plunges into life as it is lived instead of withdrawing from it in deference to a possible or problematic future one. Its vehicle is activity, not verbal learning and memorized material for a written examination. Its devices are as varied as its applications. These in turn could thinkably be as different as each person involved since the experience of each is inductive, not prescriptive nor proscriptive.

The method will suit the specific assignment, and the particular student. The kinds and sequence of experiences for each student may be determined by a counseling committee, which includes not only school specialists — methodologist counselor, and human development authority — but also the pupil and his parents. This is one of the glories of the system: it deals with man instead of with masses. Its criterion is present attainment with accomplishment resulting from required skills, attitudes, and knowledge, rather than learning intended to result in postponed accomplishment. It contributes to the world now as well as later.

The vocademic plan in operation will not eliminate the secondary school and the college, will not make obsolete the administrative council and the lecture room. Rather, it will expand their reach and intensify their influence. It will clarify their purposes and sharpen their impacts.

Nor will all students be constantly fulfilling service assignments off campus. A maximum of flexibility and choice are involved. For some there is daily involvement. For others, the Antioch pattern of a semester at a time serves best.

Doubtless many by their very nature and by the very nature of their major or minor assignments will prefer to, or of necessity, must remain "on campus".

Educational leadership and new planning techniques can make at this time a detailed blueprint for action. Obviously the best approach to such solutions will grow from the system as it now operates.

Financing

It is in financing that the vocademic design cuts most sharply across the deep conventional lines. In three respects, particularly, this factor differs markedly from the pattern with which most people are acquainted:

1. Students may obtain some compensation while going to school instead of asking them to put out for all of it. In those cases where they do not get "the going rate", they may get at least enough to cover tuition, books, and other incidental benefits.
2. The vocademic design may shift many of the costs of education to sources other than taxes. Business and industry, as well as the government agencies, may utilize institutional services. The financial saving can be substantial to education and to the other sectors of the community, both public and private.

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3. Skillful and extensive use of the vocademic design can make one dollar do the work of two or more to the ultimate saving of untold millions of dollars annually for the community.

Actually, the operation is extremely simple and can be implemented almost immediately. Every dollar produces a dollar's worth of education and may produce up to a dollar's worth or more of services for industrial, business, or governmental output.

Scope and conceptual framework

Obviously the vocademic model will eventually bring a complete new orientation to education. This new orientation should widen the view to include the academic student, the vocational student, the formal educational institution, business and industry, and all community, Federal, and State agencies

Patterns of organization

Implementing the vocademic strategy suggests more sophisticated kinds of organization to take care of the problems of governance and administration. The most sophisticated departure must come for the important liaison and contracting functions of schools, individuals, business, industry and various public and private agencies, organizations, and institutions.

Alternative Model D:

BROADENED DOMAIN OF EDUCATION AND UTILIZATION OF A SOCIO-EDUCATIONAL ACCOUNTING SYSTEM

In America, a vast area of educational activity exists for which neither enrollment nor productivity data are systematically collected.

Much of this takes place in what are commonly referred to as proprietary schools which are scarcely even identified in California communities like Fresno. These institutions are privately owned and managed and, in addition to being service oriented, are usually profit motivated. They offer business training, commercial and secretarial instruction, art, design, drafting, interior decorating, beauty culture, cosmetology, electrolysis, broadcasting, drama, oral expression, massage and physical therapy, jewelry and watch repairing, and auto mechanics, to mention only some of the commonest.

There is an enormous volume of educational activity going on in business and industrial firms of the country that goes virtually unnoticed, and for which few or no statistical data exist.

Clark has commented on the rapid rise of this kind of endeavor in recent years. He wrote:

> One of the most surprising activities of our period is the rise of education and training programs in American industry. On the basis of the available evidence, it seems reasonable to assume that more than seventy-five per cent of all large-scale American industrial concerns have programs to educate and train their workers. (1:52)

The Federal government has an infinite number and variety of programs leading to the educational improvement of both young and old. Practically every department of the Federal government has its own training program. These include such diverse measures as manpower training in many uncoordinated agencies, and the activities of the Office of Economic Opportunity, such as Central California Action Associates, Headstart, the Job Corps, etc.

Thus far in our discussion, attention has been given only to so-called "formal" education. There is much to be found in a different direction in relation to the educational offering. The development of human resources takes place in numerous ways, and by diverse means, through a wide variety of media and institutions. A recent Rockefeller report pointed this out by stating:

> The formal education system offers only part of the purposeful education that goes on in society. Family, church and school share the fundamental responsibility for education. But in a sense every institution in society is constantly teaching its members, modeling their behavior, contributing to their development. In childhood it may be the scout leader, the playground director, the policeman on the corner; in later years, the employer, the union, the mass media. (4)

It is not too difficult to identify some of the elements in the informal education component if one does not strive for categorical exactness.

The home is of the greatest importance. According to the best scientific evidence available, the early home environment has an enormous influence upon individual abilities, aptitudes, and interests. It is the family that provides the emotional nurturing and moral guidance needed by the child. When the quality of family life is disrupted or degraded by social circumstances, the moral and emotional impact on the child can be devastating.

As one of the important elements in informal education, the mass media must be critically examined and monitored. The influence of books, pamphlets, periodicals, newspapers, the stage and drama, radio and television, telephone and telegraph, the postal service, and other agencies and industries engaged in the dissemination of knowledge is tangible, effective and calculable. This highlights dramatically another aspect of the responsibility devolving upon those in public office.

> The mass media also teach and their students learn, even if both the content and method of instruction differ from those of the school. In fact, in some ways the media are an even more important educational institution than the school, for they outrank it in terms of size of operation and audience, in the amount of time and the intensity of interest devoted by that audience and in the diversity of its course content. (2:5-10)

To the foregoing, in assessing our total educational resources, must be added the impact of books and pamphlets, periodicals and newspapers, instruction given by religious organizations, libraries and museums, and other miscellaneous elements of society.

As one attempts to view at a glance the various dimensions of education suggested above, one may at first be overwhelmed with its scope, variety, and depth. In fact, however, it is possible to unify the over-all educational offering.

The economist, Fritz Machlup, has tried to equate all educative or learning experiences into dollar values by way of arriving at our total educational worth. He writes, in explanation of his thesis and procedure:

> In another meaning, the stock of knowledge would be understood as the sum total of all the stocks of knowledge present in individual minds. The separate inventories may contain the same items of knowledge, and the national inventory would thus show a great deal of multiple counting. This is not a defect of this concept, but rather its merit. A society in which only a few people have much knowledge is certainly "less knowledgeable" than a society in which many possess this knowledge, and it makes good sense to say that the "stock of knowledge" is larger if there is a larger number of minds in which the same knowledge is stocked. There is, for example, only one-and-the-same multiplication table for numbers from 1 to 10, but a society in which every adult person knows it, possesses more knowledge than one in which only a small percentage can perform multiplications. (3:122-23)

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Taking the responsibility of an educational system of the type described herein is to make the most of all the calculable resources. This will demand that public education policy makers capitalize on every wise device at their disposal in managing the educational enterprise, from pre-kindergarten through the graduate school, through ways that may now be only dimly charted. They must never for a moment lose sight of the boundless but often unexplored contributions of private and industrial educational facilities, many of which cost the public nothing directly. Thus, beauty schools, barber colleges, meat-cutting training establishments, on-the-job assignments, and dozens of other concerns in the same category, become inevitably part of the new educational establishment. To avoid costly and wasteful duplication and to update requirements, if for no other reason, the educational authorities should supervise, or at least monitor, all this activity.

This model requires a broader look at education with its traditional formalized boundaries. It is frequently referred to as the Gross Product of Education (GPE) model.

Philosophy

Education is not a system or aggregation of teachers lecturing groups of thirty bored or even eager students. It is not a matter of pouring in, nor even of "drawing out". It is really a means of developing the capabilities of people. This view compels one to think and see far beyond established formal institutions. Americans must realize that preschool, and "postschool", as well as innumerable — and often unnoticed — activities perform significant educational functions. Education thus becomes a vast complex of activities, public and private, formal and informal, for the development of human potentialities — the nation's ultimate asset. Accounting for all the developed human resources can culminate in a running register or product. This product is similar in concept to the Gross National Product (GNP) and can be referred to as the Gross Product of Education (GPE). A requirement of the GPE philosophy is that some competent agency be charged with the responsibility of accounting for all the educational contributions within the community. Wasted motion, unnecessary duplication, gaps in the educational system, are ultimately as serious in terms of the public welfare as fire and other tragic or catastrophic events.

Facilities

If the Gross Product of Education is assessed and thus its components put into the accounting system, it suddenly becomes clear that the entire community is the educational campus. Wherever worthwhile learning is going on, education is going on, and there are the facilities of education.

Personnel

The same pervasiveness mentioned in the foregoing paragraph may be noted in relation to personnel. It need only be said that the more the community's educational accounting system knows of its producers, the better to assimilate their contributions into the total community assests.

Curriculum

The expanded curriculum now becomes whatever is being taught anywhere. The world of work and recreation each must now have its own monitor, its own means of equating the educational value of diverse experiences. The law of supply and demand, in some instances, will regulate the educational offerings and equipment.

Scope and conceptual framework

Nothing can be said about an institution that does not exist, nor need anything be said about those that exist on streets, fields, and in laboratories all over the state. Such is the framework of the emerging design portrayed by Model D, a design which suggests the broadening of the domain of education.

To implement the foregoing design may require some planning and perhaps some adjustment, compromise, and experimentation. However, such tasks would certainly be worth the effort as they expand the human resources of the community and vastly extend the domain of education.

Alternative Model E:

PROJECTED COMBINATION OPTIONS

Certain ultimates now appear — certain conclusions that can add up to exciting programing in tomorrow's education.

Education as represented by Alternative Model A will, of course, be continued until something better is found. And that "something better" is already in the offing, in experiments and philosophies that currently appear nearly everywhere as alert educators take note of changing times and needs.

Whether education, as exhibited in Model A, with innovations (adding up to a weak kind of Alternative Model B) will serve is problematical.

It is doubtful whether the traditional educational system, stated as Alternative Model A, can keep pace with today's trends and challenges. Already, the ingredients of adequate and common sense alternatives are on the scene.

The ultimate projection, perhaps, for the "new" education in Fresno, and elsewhere, may be near at hand. It may take any one of a number of patterns, but it will doubtless be some combination or refinement based upon the models already described herein.

Combination Model E-1:

TECHNOLOGY BLENDED WITH VOCADEMIC

The line running through this combination model is tied at one end to Model A. To this pattern has been juxtaposed certain other plans by a sort of cut-and-paste process. Model B (sometimes reluctantly, and frequently under pressure) has been accommodated to the status quo, academic-oriented, traditional system. Its additions are sometimes nothing more than accretions, a proliferation of expedients. Often, of course, there are genuine improvements related to the ongoing program.

This is to say that there is a philosophy of advancement, consistent with the spirit of the times. If we take the devices of Model B as new creations, fresh discoveries, not patch-works to save something that is sinking, the philosophy behind this becomes a dynamic prophecy of things to come. With this point of view, and its products, may be merged the vibrant motivation of the vocademic to provide a wholly new concept, that of practical education. Already there are emerging programs that are dominated by this impulse, to lead into the utilization of the vocademic in secondary school and beyond. In this program we should have the occupational and "real world" orientation running entirely through the educational structure, with its greatest application in the upper reaches. This relates, in the lower grades, the basic thrust in Model B to a forward-looking Model C instead of to a reactionary Model A.

Combination Model E-2:

A BLEND OF VOCADEMIC WITH A GROSS PRODUCT OF EDUCATION

A second alternative, designated E-2, is at once far-reaching and practical. It calls for the utilization of the uniqueness of Models C and D, a courageous blend of vocademic principle and GPE fact. Students will spend their nonacademic time in actual participation in ongoing business and industrial pursuits. But, be it noted, this activity is not to be confined to mere formal, or informal, or even proprietary schools, but as well to all the universal spectrum of instructing and learning in whatever quarter or of whatever nature. It is all part of the community's educational wealth.

Adopting this combination Model E-2 would make the educational enterprise a unity, not a hodge-podge of unrelated affairs. It would change the educational orientation from vertical to horizontal inasmuch as every educative or learning performance would fit into the total picture instead of existing in isolation. Moreover, the vocademic elements grafted into this broad spectrum of education would serve as a catalyst for total educational improvement.

Reorganization for the administration of education under this combination Model E-2 is seen as an emphasis on human resources development. It may require only a few changes in the present organizational structure, but these will lead to additional far-reaching changes.

Combination Model E-3:

TECHNOLOGY FUSED TO A GROSS PRODUCT OF EDUCATION FRAMEWORK

Model E-3 is basically an organic combination of Model D with the innovative thrust provided in Model B. It is based as much upon philosophy as upon organization, but both are new, at least in emphasis. It would make application of the incalculable resources of the gross product of education (much of which is now unknown or ignored) in the universal tapping of all productive enterprises.

But as much to the point, and emphasizing the need for an articulate philosophy, is the fact that the early years of schooling would be oriented in this direction. The curricular and extracurricular experiences of elementary and secondary students would be gauged to this end. It would, in short, reach the ultimate ideal of total human resources accounting and development.

The thrust, therefore, of the Model B type of innovations, many of which now appear to be little more than expedients, would have direction, would be parts of a pattern of educational assimilation; all contributing pertinently to the total enterprise. Everything would be by design. Nothing would be merely filling space or serving as a fad or an attempted piece of patchwork to hold together or cover up a deficiency in an antiquated model of education.

Combination Model E-4:

A COST-EFFECTIVE MAXIMIZATION OF TECHNOLOGY, VOCADEMIC, AND GROSS PRODUCT OF EDUCATION

The essence of a total provision for the administration of education is distilled in Combination Model E-4. Unlike the foregoing combination models, this is not a combination of two alternatives. It goes much further. It is a multiple arrangement which makes a maximum use of the cost-effective results of all the best elements of all models.

Upon the basic framework of Model D — the total human resources development and accounting provision — it structures, wherever possible, the essential details of the vocademic design, Model C. But it goes even further. It brings into focus and use, the innovative genius of Model B which provides the technological impulse toward new developments. It capitalizes on the thrust of progress. Option E-4 is, therefore, an additive model, making optimum use of all that has been discovered and presented herein to achieve the objectives of education in the most cost-beneficial and cost-effective ways.

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VI. RESOURCE BREAKTHROUGHS

FOR SCHOOLS

Philanthropic Sources.......................... 1

Foundation Sources............................. 3

Adoptive Support............................... 4

Federal Sources................................ 5

Current Sources................................ 5

Today's challenge is to maintain the subtle balance between the professional staff looking a generation ahead and a community looking at its tax bill.

..Anonymous

Remember, necessity is the mother of invention. High heeled shoes started when a young lady was kissed on her forehead.

..Anonymous

RESOURCE BREAKTHROUGHS FOR SCHOOLS

The public schools (K-12) have a locked-in method of financing programs and buildings that is as antiquated and obsolete as the belief that 12 years confined in a classroom sequence produces an educated citizen. Money for schools is only as limited as the imagination of educational leadership, however.

At present the local school board is restricted to formula funds provided by the State Legislature to supplement the revenue gained from a local property tax levied by the board of education within specified limits. That is where revenue source and vision now terminate except for certain types of Federal fund grants.

At this point any official--in education or other government--can probably enumerate at least 20 different ways why it is impossible to obtain additional revenue. This is what was meant earlier by stating that money for schools is only limited by imagination. Let us review the barriers and opportunities.

PHILANTHROPIC SOURCES

In the first place, let us lift our locked-in vision to public schools that exist beyond grade 12--an obsolete and arbitrary line of demarcation--that are called colleges, universities, or various types of institutes. These public schools must also draw their funds primarily from the gratuities of the legislature. In most instances they are authorized to levy tuition charges in lieu of local taxes. Thus, the boundaries of financial resources are apparently locked into the same

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framework as the K-12 schools. Their traditional imagination, however, is very, very different.

Any good college or university today that is worth its salt brings in a large share of its annual income through gifts and donations. In fact, these philanthropic endowments may not only support a variety of programs, but build facilities and carry a perpetuity of benefits into the unlimited future. American business has never been so prosperous and the tax exempt gifts have never been so generous.

How long has it been since you saw a clipping in the newspaper where some individual or corporation donated $3 million or $10 million or $150 million dollars to the public schools (K-12) of which he is an alumni or the corporation felt a keen interest? The answer is never! How long since this happened at the post high school level? It is an every day occurrence, and the most generous donors frequently prefer not to have any publicity.

"But", says the typical school official, "nobody ever comes to us and offers such gifts -- or even little ones, except the PTA's". The next query is about how long has it been since the schools asked -- or sold -- a donor on such a gift? The answer again, of course, is never!

On the public college and university level, an entire department with staff, publication facilities, etc.. is devoted solely to assist the president in this "public relations" activity. This kind of work is a selling job, sometimes hard-sell and sometimes soft-sell, but with diligent and persistent effort it gets results.

Before the school official enumerates all of the laws and legal restrictions on the public schools (K-12), let us recognize that the colleges must function under the same kind of antiquated legal restrictions. It takes very little ingenuity, however, to set up a legally separate, non-profit corporation that can work around virtually any of these legal tangles in order to provide the needed service and funds, directly or indirectly, to the schools. This is common practice at the college and university level in order to operate outside of the rigid strangle hold of the legislature. This is, in truth, a manifestation of local control and local initiative.

While no mention has been made of the private schools, it should be pointed out that approximately one-half of all colleges and universities in the United States are private. These institutions must survive solely on this kind of philanthropic effort. Their numbers and the names of Stanford, University of Southern California, etc. bespeak their success.

The colleges and universities long ago learned that they may have to name or rename a classroom, a laboratory, a building or even a stadium after some generous donor. But they have discovered that the bronze plaques and accompanying ceremonies are minor investments which generate goodwill and additional donors and money. Such honors can even be arranged for small expressions when they are linked with library collections, scholarship aids, or even flagpoles.

FOUNDATION SOURCES

Much about philanthropic sources would apply to foundation sources

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in strengthening public school resources. Several observations may be made about differences in these funding sources.

First, foundations have specific goals and are not usually willing to participate in general unrestricted support of specific projects which do not match their interests. They may have firm limits on the period of time they will renew or maintain support. This point is akin to the tendency of some foundations to want commitment for "matching" of local funds for particular programs, gradually reducing foundation share so the effect is "seed money" through which the school district becomes commited. This poses no problem if the school system carefully identifies new program goals of the schools, and matches then with similar program goals of various foundations. The greatest liability in securing such funds appears to be the lack of truly creative ideas well documented before exploring foundation sources.

ADOPTIVE SUPPORT

The literature in education reveals a few examples of communities in which industries have adopted schools. A typical situation would be a community with several high schools and a number of major large business firms where each high school is adopted by a different firm. "Parent" businesses then work closely with school staffs to assist in suggesting managerial techniques, technology, or program components which can strengthen the effectiveness or efficiency of the schools. Such programs basically are not financial gift plans, but the outcomes are often some small direct gifts plus valuable indirect services and support which enrich school productivity and improve external school communications.

There may be insufficient large firms in Fresno to permit this type of support to operate, but it is quite possible that a sector of smaller firms of one type, or a cluster of quite varied firms, might become interested in adopting a given school.

FEDERAL SOURCES

Additional aggressive leadership and planning is recommended. Many Federal funds for manpower training, migrant education, pre-school education and other programs which could legitimately be carried by the public schools are not channeled through the school system. Indeed they often appear to lack little comprehensive direction with the number of programs which competitively duplicate services to the same target groups.

Within the public school system, itself, Federal programs appear to lack appropriate coordination. It is quite probable that a unitary control in the district, with primary responsibility for monitoring all Federally funded education activity both in and out of district, would also have opportunities to discover additional sources as well as maximize values obtained from current Federal expenditures.

CURRENT SOURCES

Searching out and harvesting current sources for schools should never give any excuse for the relentless efforts that must go on for additional legislative support and local tax sources. On the contrary,

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the pressure must be kept at full throttle for education to compete with other competitive activities that are far less deserving and many times more vocal in lobbying and in the mass media. The post-high school public institutions have, in fact, discovered that the non-public sources of funds provide platforms, lobbies, and public relations efforts that can be mounted effectively without the expenditure of public monies.

As the sayings in business go: "It takes (private) money to get money" and "Success breeds success". It's time that public education (K-12) operate more flexibly in relation to agressive fund seeking using higher education and business techniques.

VII. A PROCEDURE FOR SOLVING SPECIAL PROBLEMS IN THE DEVELOPMENT OF FRESNO EDUCATION

> "The formulation of a problem is far more often essential than its solution, which may be merely a matter of mathematical or experimental skill."
> --Albert Einstein

A PROCEDURE FOR SOLVING SPECIAL PROBLEMS IN THE DEVELOPMENT OF FRESNO EDUCATION

An effective plan for solving problems must be simple, sequential, and logical. With modern planning techniques, it is now possible to design extremely complex patterns for problem solving. Frequently, in education, the complexity of problems is thought to require equally complex problem-solving methods. In the search for a complex solution mechanism it becomes very easy to fall into the trap of ignoring or putting off any real consideration of the problem itself and prematurely focusing on solutions.

One alternative to a complex problem-solving mechanism is no mechanism at all. This is just as potentially disastrous as is an overly complex method. With no adequate plan of problem solving, the resultant solutions are apt to be inadequate and may create chaos. The goal to strive for, of course, is a simple but effective method.

The problem-solving procedure shown on page VI-9 is presented as a simple, sequential, and logical model for problem solving. Moreover, it can be used for any problem. The procedure it depicts is dependent on constant referral to the Community Data Register described in Part IV of this document and shown visually in relation to other elements of a Model Education Master Plan in Part VIII which follows.

It is advantageous to examine each step in the problem-solving model in some detail and ask the questions: who, what, how, and when.

Step 1.0 Identify Problem

This requires a clear statement of a problem by any individual, group of individuals or organization that perceives the present condition in need of change. This is likely to be a somewhat polarized view of the assumed problem and will often include a suggested solution to make the present condition better. How the problem is stated at this initial stage will depend upon the source of the concern and to whom the concerns are expressed. These concerns are apt to be comprehensive and sensitive to unmet needs when they are the product of a regular (procedural) evaluation process.

In addition to those perceiving the problem, the identification should at some stage involve those affected by this problem, those responsible for changing the present condition, and those who will be responsible for evaluating the effectiveness of any change implemented. This step requires that the perceived problem be related to other facts, values, and policies in order to gain a better understanding of all associated processes or factors. In order to identify the real problem, the stated concern must be thoroughly analyzed. To do this it is essential that there be an accurate assessment of facts presently related to the concern and a clear identification of the relevant values. A need documented as a mismatch is shown to exist when these facts and values are compared. Thus a need is defined as the documented difference between what is (facts and policies) and what ought to be (values). The format used in project publication No. 32 is suggested (see publication list in Appendix).

Step 2.0 Define Problem

Experience in many fields testifies to the need to carefully define a problem before trying to solve it. This entails the identification of various limits or constraints as well as enabling policies and resources. As the problem is defined it becomes advantageous to prepare various performance requirements for a solution or the conditions which will qualify a solution as a solution. These performance requirements should answer the following questions:

1. What will be done?
2. How much, to what degree?
3. By whom?
4. When, or within what time period?
5. Where and under what conditions?
6. For whom (or, to whom)?
7. How success or failure will be measured?

Theoretically, this step should also be accomplished by those given the specific responsibility for problem solving. It is not necessary, however, that these be the same persons as those who identified the problem (Step 1.0). This operation should be done as soon as possible after Step 1.0. Any delay may be interpreted by those who identified the problem as an indication that their concerns are insignificant or trivial and that they are being ignored. Moreover, the results of the problem definition, Step 2.0, should be communicated to those involved in Step 1.0 as soon as it has been completed.

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Step 3.0 Analyze Problem

The preceding steps of identification and definition were addressed to a specific item of concern. However, before an exhaustive array of possible solutions is generated it is advantageous to make a total analysis of the problem. Where the competence is available this step is profitably carried out by the same group that completed Step 2.0. Analyzing the problem consists of four procedural steps: (a) identification, (b) separation, (c) relating, and (d) limiting. It begins with the identification of the major "whats" (or objectives) to be accomplished in resolving the problem. Next it identifies a series of middle-size "whats", and eventually it carries this same process along until the tiny or detailed "whats" have been identified. In each instance the identified "whats" are separated out and their relationships depicted graphically or in sequential form and then limited or terminated. This step is an application of systems analysis. about which orderly procedures have been published.

Step 4.0 Generate Alternative Solutions

The name of this step provides only a clue to what goes on at this point. This step should be guided by those specifically responsible for Steps 2.0 and 3.0 but ideally should also include some of those involved in identifying the problem. This step is designed to force all preconceived or biased solutions out into the open. The strategy up to this point has been one of deferring solutions until all of the design specifications have been made through definition and analysis. In addition to the catharsis effect, of generating first-cut solutions, however, a vigorous effort must be made through search, research, brainstorming, and other productive means to generate possible solutions. The techniques of modeling, and simulation can be used profitably at this juncture.

In any event, and by whatever means, the aim is to strive for volume in numbers of solutions. Here the creative principle of "quantity breeds quality" is followed with great advantage. In addition to various techniques, it is helpful to tap various sources for suggested solutions. For example, the analysis of the problem (Step 3.0) may have indicated a need for obtaining expert advice from specialists either within or without the district. A prime source of data for solution generation should be the Community Data Register.

As various solutions to the problem are developed it may be that either the problem definition or analysis may require modification. It is not possible to place a specific time limitation on this step. The time required to generate alternative solutions will depend upon the complexity of the problem and the time required to obtain specific data. During this step there will be a temptation to eliminate solutions that are clearly impractical. This is a logical thing to do but should be deferred in order to assure that the thought process of those involved in determining problem solutions are not limited, but instead uninhibited.

Step 5.0 Select Best Solution

This step is a logical continuation of Step 4.4. The actual decision

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making in this step need not involve, and probably should not involve, those out of the district, though their advice on selection may be obtained.

Selection of the optimum solution among those alternatives which have been generated should be governed by the identification of specific criteria. These may range from a short list of broad factors to a very detailed list of well-defined specific constraints and limitations. These criteria will require the selected solution to be:

1. Effective — achieves identified goal
2. Relevant — satisfies present need
3. Clearly stated — understood by all
4. Internally consistent — does not contradict other activities
5. Efficient — minimum wasted effort
6. Feasible -- can be implemented within existing constraints of time, cost, effort, etc.

These criteria, initially developed in step 3.0, should be related to specific values taken from the value bank recommended in Part III.

At this point in the problem solving sequence two major data sets exist: one, a set of alternate solutions and, two, a set of criteria to govern the selection of a single solution to be implemented. The actual selection could be made by a planner, the problem identifiers, the problem analysts, an independent jury of staff and/or citizens, or any combination of these.

One outcome of this selection process may be that no solution presented is acceptable. In this case a loop-back or recycle through Steps 1.0 to 4.0 is necessary.

At the conclusion of Step 5.0, it is mandatory that any decision relevant to the problem be made known to all persons involved. Internal and sometimes external communication is vital at this point.

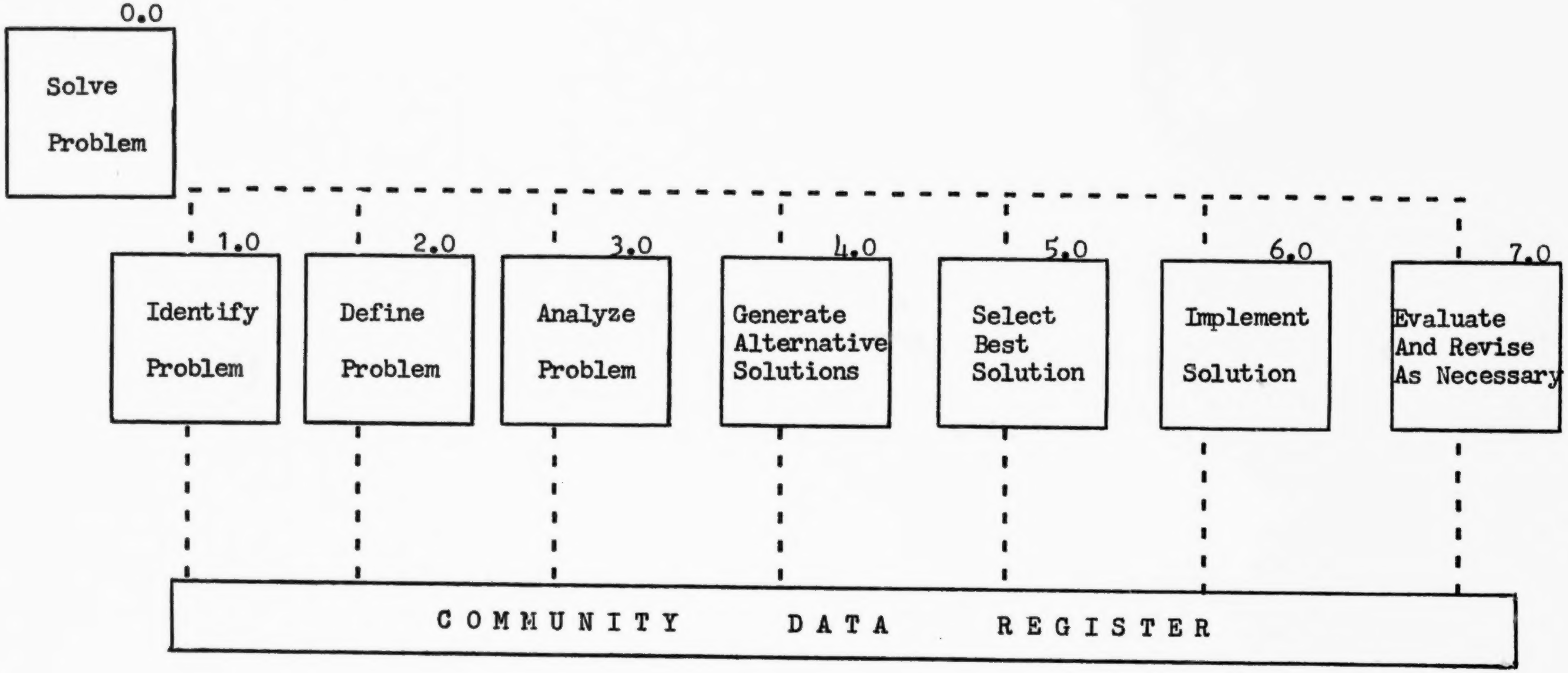
Step 6.0 Implement Solution

After selecting a specific solution, a detailed plan for its implementation should be prepared. The plan must include its method of evaluation. It must be remembered that the decision of what to do has already been made and the only problems to be faced here are those of trying it out. It is helpful if those who will actually be responsible for seeing that changes are made in the system as indicated should be involved. During the implementation, careful observations should be made by both those doing the implementing and external observers. The results of these observations, plus whatever other controls and tests are used, supply the data for the final step, the evaluation.

Step 7.0 Evaluate and Revise as Necessary

It is recommended that cooperative evaluation be done by those implementing the solution, those who planned the solution, those who first identified the problem, and, if possible, by those who were affected by the solution. In addition, however, the evaluation process should be monitored by an external evaluator not involved in any of the activities. The criteria for evaluation are the analysis of the problem, Step 3.0, while the evaluation techniques to be used are those developed in Step 6.0.

The results of the evaluation should offer a clear suggestion as to future activity in terms of continuing implementation. Evaluation should result in a clear recommendation for continuing use of the solution with or without modifications and revisions, or recycling (looping back) to find better solutions. It may also recommend a course that abandons any change and thus a return to the original procedure. The results of any final evaluation should be made available to any person or group who could be expected to face similar problems.


0.0
Solve Problem
1.0
Identify Problem
2.0
Define Problem
3.0
Analyze Problem
4.0
Generate Alternative Solutions
5.0
Select Best Solution
6.0
Implement Solution
7.0
Evaluate And Revise As Necessary
COMMUNITY DATA REGISTER

VIII. ELEMENTS OF A MODEL EDUCATION MASTER PLAN

> The institution we call "school" is what it is because we made it that way. If it is irrelevant, as Marshall McLuhan says; if it shields children from reality, as Norbert Weiner says; if it educates for obsolescence, as John Gardner says; if it does not develop intelligence, as Jerome Bruner says; if it is based on fear, as John Holt says; if it avoids the promotion of significant learnings, as Carl Rogers says; if it induces alienation, as Paul Goodman says; if it punishes creativity and independence, as Edgar Friedenberg says; if, in short, it is not doing what needs to be done, it can be changed; it must be changed.
>
> -Foreword
>
> Teaching as a Subersive Activity

ELEMENTS OF A MODEL EDUCATION MASTER PLAN

Volume B has presented seven major configurations describing concerns for education in the year 2000. These configurations were I, The Future; II, A System of Management Accountability; III, The District's Philosophy, Goals, and Policies; IV, Community Educational Planning; V, A Responsibility for Total Human Resource Development; VI, Resource Breakthroughs for Schools; and VII, A Procedure for Solving Special Problems in the Development of Fresno Education. Each of these configurations presented challenges to be met in designing an Educational Master Plan.

The Model Educational Master Plan, (following page VIII-5) is designed to accommodate each of these major configurations. The Master Plan consists of four major components which are color-coded by types of responsibility. Responsibilities of the community at large are indicated in white. The Board of Education is primarily responsible for the components shown in blue. Activities that are jointly the responsibility of the community and the Board of Education are illustrated in green. Activities that are primarily the responsibility of the public school staff are colored yellow. Each of these four major components is further subdivided into individual responsibility activities.

The Community

The structure of the community is both informal and formal. Throughout this structure people are available to other people and diverse opportunities for learning are found. Informal aspects of the

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community are those that provide public availability such as the mall, the park, the streets, and private availability where individuals are found within their own homes. Both types of these informal structures provide an environment where education can take place. The formal structure of the community consists of public educational establishments such as the public schools and colleges, non-public educational establishments such as private, proprietary and parochial schools; public noneducational establishments such as City Hall, Fire Department or Police Department; and nonpublic, noneducational establishments such as the varied commercial concerns within the community. Each of these establishments offers a unique environment suitable for specific types of education.

Education for all citizens is essential if the community is to realize its opportunities for growth — economically, physically and socially. This Master Plan recognizes that education is a total community responsibility and describes those relationships that will effectively utilize total community resources in meeting this responsibility. The sum of experiences in the combined informal and formal community, including schools, produce a Gross Product of Education. The Master Plan recognizes that the schools are only one agency contributing to the Gross Product of Education. However, the Master Plan increases the school's responsibility to monitor the education programs of other parts of the community so that the program offered by the schools is consistent with, and coordinated with, the programs of other agencies, and that the educational needs of all citizens are met.

A central data register is recommended to assist the schools as well as other community agencies in coordinated planning. This register was more fully described in Part IV of this volume.

Board of Education

The Board of Education has a twofold responsibility. It oversees all the operational aspects of the public school system and participates with the community in coordinating and monitoring the Gross Product of Education. To meet the first responsibility, the board appoints a school superintendent who is directly responsible for all operations within the public school system. The second responsibility, that of monitoring the Gross Product of Education, is one the board cannot delegate, but must directly assume. The elected school board speaks for the community as a whole in matters related to education. It then becomes the responsibility of the board to state the educational philosophy of the community and to determine specific policies that will implement that philosophy. The board also has the responsibility for evaluating what takes place in education. To effectively do this the board must be in constant, personal contact with the citizens of the community. This means the establishment of advisory committees representing all aspects of the community, and technical liaison committees representing the experts in education and other agencies.

When the school board has determined the community's educational philosophy, and how well the educational needs of the community are being met, it is then ready to take two further steps. It should encourage and monitor the total community human resource development, and should participate with other agencies in physical, economic and social community development.

Joint Responsibility of Community and Board of Education

There are two major areas in which the Board of Education shares the responsibility for development with other community agencies. Acting as the educational leader, the board should cooperate with other agencies in developing long-range plans for community development. This means a continuing, ongoing, close relationship with other responsible agencies such as the City Council, the county Board of Supervisors, and their respective planning units. The top line in the Education Master Plan Model illustrates in a generic way the specific activities involved in meeting this joint responsibility. Coordinated planning of this nature will allow the community to have educational facilities and programs that meet community needs while avoiding wasteful and unnecessary duplication of services. In addition to its role in community planning, the board should cooperate with other agencies in identifying and developing the ability of each individual member of the community to be a productive citizen. The most important aspect of this cooperative role is identifying what all institutions in the community, other than public schools, are doing to educate the citizens. When educational goals are properly defined, and resources for achieving those goals are identified, the task that remains is one of facilitiating association of individuals with appropriate environments.

Public School Staff

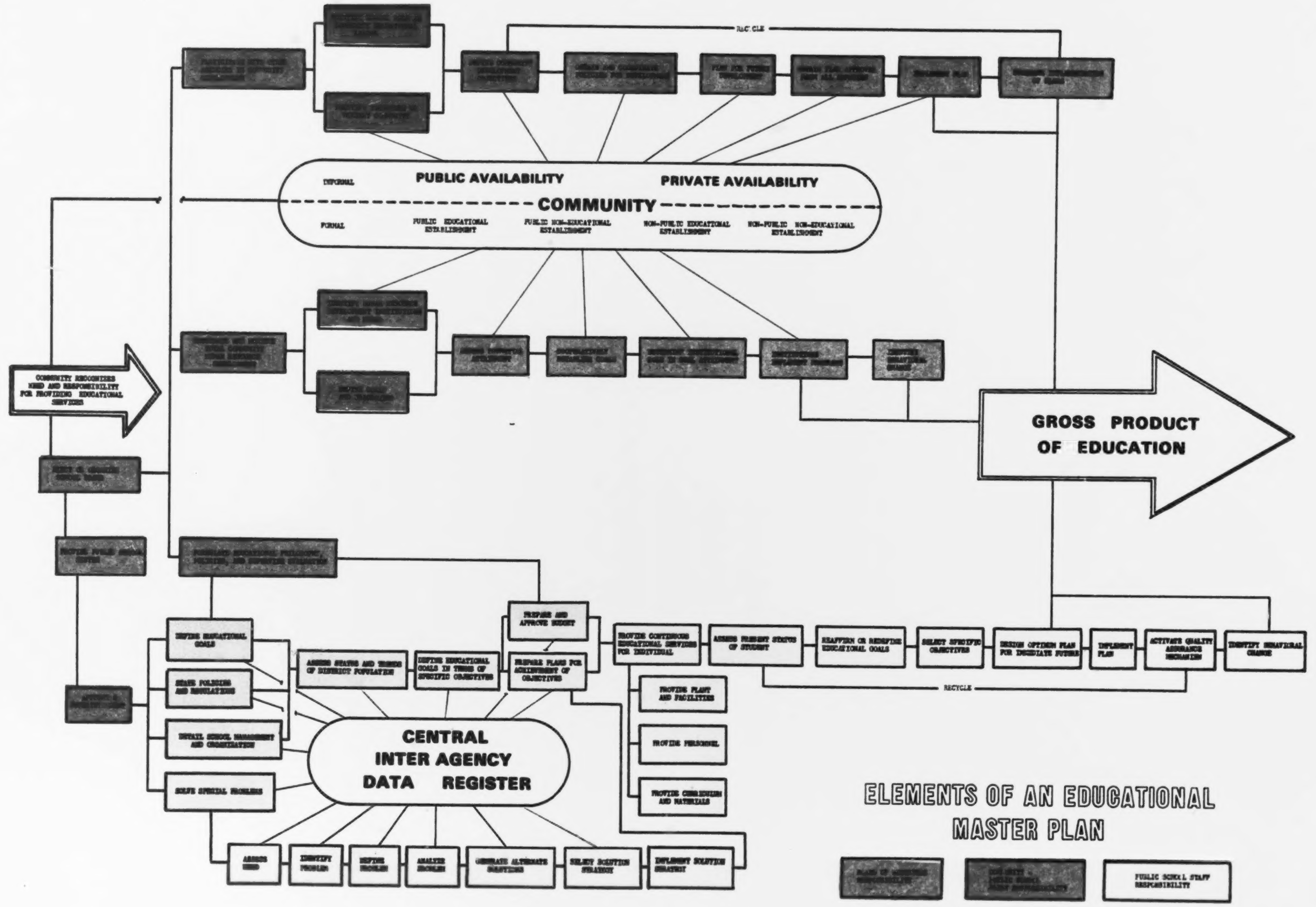
The Education Master Plan Model illustrates two types of activities for the public school staff. The first is a series of activities surrounding the central data register. These are activities to maintain and operate the school system as a whole. The second type of activities are sequential and are directed toward individual students.

Each public shool activity or series of activities illustrated in the Education Master Plan Model is described in greater detail in other parts of the Educational Master Plan volumes.

Summary of Model

The community produces and is a product of its own Gross Product of Education. The full development of human resources depends upon identification of all community educational potential and its utilization.

This model charts new and broader dimensions for human resource development (Gross Product of Education) by identifying the total community relationship to, and responsibility for, education. It describes the role of the public schools in the total community. Most significantly, it illustrates appropriate relationships of all agencies which bear upon human resource development and fixes logical responsibility.


RECYCLE
PLAN FOR FUTURE DEVELOPMENT
OBTAIN PLAN APPROVAL FROM ALL AGENCIES
IMPLEMENT PLAN
INFORMAL
PUBLIC AVAILABILITY
PRIVATE AVAILABILITY
COMMUNITY
FORMAL
PUBLIC EDUCATIONAL ESTABLISHMENT
PUBLIC NON-EDUCATIONAL ESTABLISHMENT
NON-PUBLIC EDUCATIONAL ESTABLISHMENT
NON-PUBLIC NON-EDUCATIONAL ESTABLISHMENT
COMMUNITY RECOGNIZES NEED AND RESPONSIBILITY FOR PROVIDING EDUCATIONAL SERVICES
COOPERATIVELY ESTABLISH GOALS
IDENTIFY BEHAVIORAL CHANGE
GROSS PRODUCT OF EDUCATION
ELECT OR APPOINT SCHOOL BOARD
FORMULATE EDUCATIONAL PHILOSOPHY, POLICIES, AND SUPERVISE OPERATION
DEFINE EDUCATIONAL GOALS
STATE POLICIES AND REGULATIONS
DETAIL SCHOOL MANAGEMENT AND ORGANIZATION
SOLVE SPECIAL PROBLEMS
ASSESS STATUS AND TRENDS OF DISTRICT POPULATION
DEFINE EDUCATIONAL GOALS IN TERMS OF SPECIFIC OBJECTIVES
PREPARE AND APPROVE BUDGET
PREPARE PLANS FOR ACHIEVEMENT OF OBJECTIVES
CENTRAL INTER AGENCY DATA REGISTER
ASSESS NEED
IDENTIFY PROBLEM
DEFINE PROBLEM
ANALYZE PROBLEM
GENERATE ALTERNATE SOLUTIONS
SELECT SOLUTION STRATEGY
IMPLEMENT SOLUTION STRATEGY
PROVIDE CONTINUOUS EDUCATIONAL SERVICES FOR INDIVIDUAL
PROVIDE PLANT AND FACILITIES
PROVIDE PERSONNEL
PROVIDE CURRICULUM AND MATERIALS
ASSESS PRESENT STATUS OF STUDENT
REAFFIRM OR REDEFINE EDUCATIONAL GOALS
SELECT SPECIFIC OBJECTIVES
DESIGN OPTIMUM PLAN FOR IMMEDIATE FUTURE
IMPLEMENT PLAN
ACTIVATE QUALITY ASSURANCE MECHANISM
IDENTIFY BEHAVIORAL CHANGE
RECYCLE
PUBLIC SCHOOL STAFF RESPONSIBILITY

ELEMENTS OF AN EDUCATIONAL MASTER PLAN

PROJECT PUBLICATIONS

PHASE I — NEEDS ASSESSMENT

Staff Research Reports

1. Brainstorm — Needs Perceived by School Staff
2. Speak-Up — Needs Perceived by Community
3. Student Speak-Up — Needs Perceived by Secondary Students
4. School Staffing
5. Analysis of Achievement
6. Problems Perceived by Educational Leadership

County Schools Survey

7. Vocational Occupational Needs Survey (published by County Regional Planning and Evaluation Center - EDICT)

8.
9. Other County School Needs Survey Reports (EDICT)

TASK FORCE

Educational Content Fields

10. Reading
11. Language
12. Mathematics
13. Science
14. Foreign Language
15. Cultural Arts
16. Social Science
17. Physical Education

Other Educational Areas

18. Teaching/Learning Process
19. Special Education
20. Guidance
21. Health
22. Student Personnel
23. Adult Education
24. Vocational Education

Urban Physical Factors

25. Urban Physical Factors

Urban Social and Human Factors

26. Relevance and Quality of Education for Minorities
27. Special Needs of Mexican-Americans
28. Special Needs of Negroes

PROJECT PUBLICATIONS

PHASE II — MASTER PLAN DEVELOPMENT

29. Conclusions from Needs Assessment Publications

30. Summary — Fresno Educational Needs Assessment

31. The Process of Educational Planning

32. Mission Objectives

33. School Organization Patterns
    The Educational Park
    The Middle School

34. Interagency Educational Planning
    Community Planning Process

35. Interagency Educational Planning
    Community Planning Register

36. Long-Range School Site Location Plan

EDUCATIONAL MASTER PLAN

volume A	SUMMARY
volume B	CONFIGURATIONS: DESIGN FOR THE FUTURE
volume C	IMPLEMENTATION: PLANNED CHANGE

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League of Women Voters	Carol Slinkard

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Carl Trieb	Occidental College (Retired)	Physical Education
Decker Walker	Stanford University	Cultural Arts
Dr. Stanley E. Williamson	Oregon State University	Science

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H. M. Ginsburg, M.D.	Ann M. Leavenworth, Ph.D.
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Board President *1967-68, **1968-69, ***1969-70

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Dr. M. Marty Santigian, director - information services and human relations

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